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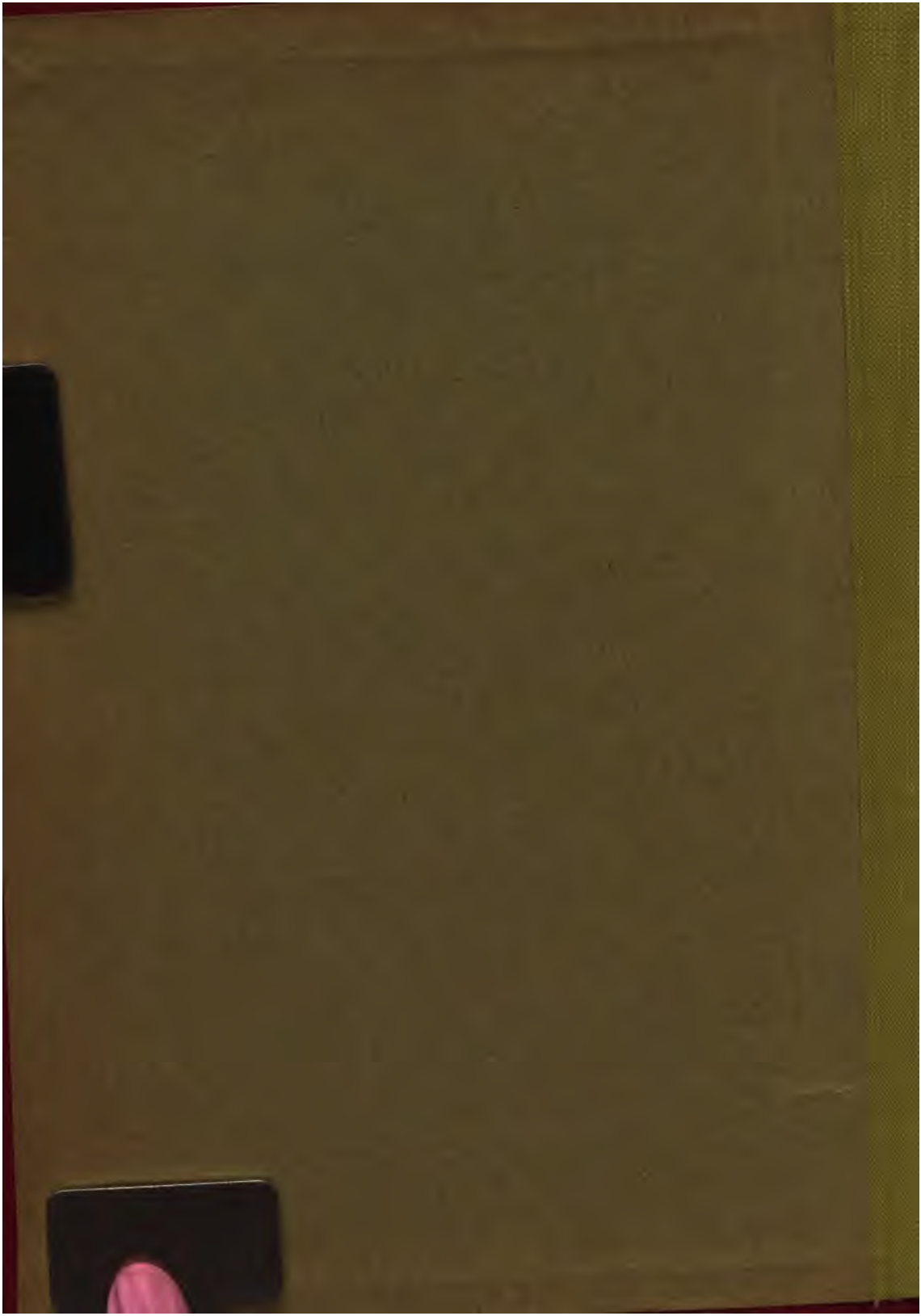

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Aqueduct

MINUTES

OF THE

AQUEDUCT COMMISSIONERS.

1891.

VOLUME 7.

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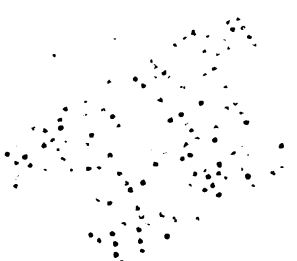

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, January 7, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

In the absence of the Secretary, Auditor J. C. Lulley acted as Secretary pro tem.

On motion of Commissioner Scott, the minutes of stated meeting of December 31, 1890, were ordered approved.

The Committee of Finance and Audit reported their examination and audit of bills contained in Vouchers Nos. 6595 to 6608, inclusive, amounting to $267.44.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following :

The Construction or Executive Committee present the following communication received from the Chief Engineer, and recommend that the same be spread in full on the minutes and filed :

NEW YORK, January 6, 1891.

Schedule of the flow at Croton dam into the New Aqueduct, as per request of the Chief Engineer of the Croton Aqueduct.

Since December 30, 1890, the date of my last report, the flow of water has been continued at the rate of 60,000,000 gallons per 24 hours.

A. FTELEY, Chief Engineer.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Chief Engineer of this Commission has certified in writing, under date of January 6, 1891, that Robert Hanna & Co. have completely performed and carried out the provisions of the contract made by them with this Commission on the 17th day of April, 1889, for con-

structing Section 15½ of the New Aqueduct, and has stated from actual measurements the whole amount of work done and materials furnished under and according to the terms of said contract, and of the true value thereof; now, therefore, be it

Resolved, That the Aqueduct Commissioners do accept the work done and materials furnished by Robert Hanna & Co., under the contract made by them with this Commission on the 17th day of April, 1889, for constructing Section 15½ of the New Aqueduct, and that a proper voucher for the final payment for work done and materials furnished under said agreement be approved by the Aqueduct Commissioners, and certified to the Comptroller for payment; and the Comptroller is hereby requested to pay the amount of said final estimate without any deduction for overtime.

The same were adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also presented the following:

OFFICE OF THE CHIEF ENGINEER OF THE CROTON AQUEDUCT,
No. 31 CHAMBERS STREET,
NEW YORK, October 21, 1890.

Hon. THOMAS F. GILROY, *Commissioner of Public Works:*

DEAR SIR—I beg to submit to you the following views on the project of locating a dam and reservoir on the lower Croton river, as presented in the report of 8th instant from Chief Engineer Fteley to the Aqueduct Commissioners, and upon which there is to be a public hearing on the 27th instant:

Chapter 490 of the Laws of 1883 provides that the Aqueduct Commissioners appointed under the act shall construct new reservoirs, dams, and a new aqueduct for the purpose of supplying the City of New York with an increased supply of pure and wholesome water.

Section 2 of the act provides that the New Aqueduct shall be constructed from some point on the Croton river or Croton Lake to some point in the City of New York, and for the construction of one or more dams or reservoirs.

The Commissioners have constructed the New Aqueduct from Croton Lake to the Central Park Reservoir, and have also contracted for the construction of the following reservoirs, on which work is now in progress, and of the capacity in gallons as follows:

Two reservoirs on the East Branch of the Croton river	8,000,000,000
Reservoir M, on Titicus river	6,000,000,000
Reservoir D, on West Branch of Croton river	9,000,000,000
The Department of Public Works is now constructing Reservoir A, on Muscoot river.	7,000,000,000
Total capacity of reservoirs now under construction	30,000,000,000

In an excessively dry year a storage capacity of 10,000,000,000 will be required in addition to the reservoirs, lakes and ponds now in use, to assure the additional daily water supply of 40,000,000 gallons through the New Aqueduct, which is now needed by the city.

The present yearly increase in the consumption of water is 3,000,000 gallons per day, which would require, in very dry years, 750,000,000 gallons additional storage capacity each year. The storage reservoirs now in course of construction, or under contract, will provide for the storage required for the next twenty-two years, and if the supply of water for the last eight years is taken as a basis, they would furnish the necessary storage for the next forty years.

When all the storage reservoirs above enumerated are completed, the daily water-supply of the city can be increased at least 100,000,000 gallons per day.

This presents the question whether any more money should be expended at the present time for the construction of additional storage reservoirs, with the annual cost for interest on bonds and maintenance of the reservoirs a long time ahead of their necessity, especially in view of the large amount of money which will have to be expended on water-mains in the city for the distribution of the large increase in the water-supply.

As to the selection of the site for a dam on the Croton river below the present Croton dam :

The Legislature decided that the increased water-supply should be obtained from the Croton river.

The capacity of the New Aqueduct, built by the Aqueduct Commissioners, is 325,000,000 gallons, and the capacity of the Old Aqueduct, when it can be relieved of the present excessive strain, is 75,000,000 gallons, making the total daily capacity 400,000,000 gallons. To obtain such supply the available area of the Croton water-shed will have to be increased to the fullest possible extent, by building a dam as near the mouth of the river as practicable. This is shown by the opinions of the most eminent hydraulic engineers in this country, Messrs. John B. Jervis, E. S. Chesbrough, James B. Francis, George S. Greene, Julius W. Adams and others, at the time the plans for the New Aqueduct and reservoirs were under consideration, and, according to these opinions, the necessary storage at the lower part of the Croton river should have been provided for simultaneous with the construction of the New Aqueduct. If this had been done, a very considerable expenditure for the construction of about two and one-half miles of the New Aqueduct, to carry it to a point farther up the Croton river, and the building of the extensive gate-house at Croton dam, would have been saved.

The building of another dam so near the present Croton dam, as now proposed, would, to a large extent, be an unnecessary expenditure of money that should be, and will ultimately have to be, expended for a dam located, as near as practicable, to the mouth of the river, and which will collect the rainfall from the entire available area of the Croton water-shed.

The present Croton dam has been in use fifty years, has never given any trouble, and has fully performed all that was contemplated when it was built. As a matter of fact, the increased quantity of water brought to the city year after year, and each storage reservoir built above it, have relieved it of pressure to that extent and have increased its safety.

Very respectfully,

GEORGE W. BIRDSALL,
Chief Engineer of the Croton Aqueduct.

CHIEF ENGINEER'S OFFICE—AQUEDUCT COMMISSIONERS,
ROOM 213, STEWART BUILDING,
NEW YORK, November 12, 1890.

To the Honorable the Committee on Construction :

GENTLEMEN—The report of George W. Birdsall, Chief Engineer of the Croton Aqueduct, on the proposed new Croton dam, dated October 21, 1890, and transmitted to you by Commissioner Gilroy of the Department of Public Works, has been referred to me. I beg leave to return it with my comments.

As to the probable amount of storage that will be necessary for the next twenty-two years, Mr. Birdsall relies on the information furnished by the present rate of increase, which may change ; but, admitting this rate to be continued for the next twenty-two years, the daily consumption would then be, by his own reckoning, 66,000,000 gallons per day more than it is to-day, i. e., on the present basis, as indicated by himself, of 150,000,000 gallons per day, a total consumption of 216,000,000 gallons per day. But the records of the dry year extending from February, 1880, to February, 1881, show that during a similar dry year the whole yield of the river (without wasting a drop) would have not yielded (proportionately to the drainage territory limited by the said reservoirs) more than 180,000,000 per day, showing that a large reservoir further down the river is

absolutely necessary to collect the drainage from the portions of the water-shed located below the reservoirs under construction.

The necessity of building a large reservoir at a lower point on the valley being demonstrated, the proposed new Croton dam, by Mr. Birdsall's own showing, is amply sufficient for the period named, and, inasmuch as its cost is such that the interest of the sum saved by not building at present Quaker Bridge dam would be more than sufficient to build the proposed structure, the question of duplicate expenditure (in view of the possible building of a larger dam in the future, which, by Mr. Birdsall's admission, is very remote) would be eliminated.

I have, in my report, referred to the high authorities who recommended the construction of Quaker Bridge dam, and expressed my concurrence with their views at the time that their report was made; but Quaker Bridge dam at that time was the only one contemplated to be built. The building of the new dams in the upper part of the valley has put the question on a wholly new ground, and the opinion quoted cannot apply to the present case.

It is true, and I so state in my report, that, to quote Mr. Birdsall's words, "the present Croton dam has been in use fifty years, has never given any trouble, and has fully performed all that was contemplated when it was built," but the unexpected may occur, and, as I stated before, "although the present Croton dam has rendered good service for half a century, it must be conceded that it is not built in such a manner as a structure should be on which depends the very life of New York, and it is necessary that it be replaced by a more substantial one." I fail to see that the safety of the present dam has been increased by the consumption and by the erection of reservoirs.

In conclusion, I may be permitted to reiterate my statement that, "by that time also, the experience of a number of years in handling the constantly growing quantities procured from the water-shed would furnish increased and invaluable knowledge in regard to its capacities; in regard to the effect of the unexceptionally large volume of the storage on the quality of the water; in regard to the subsequent advisability of accumulating the storage to add to the natural flow of dry years, and, ultimately, when the time would come for further action, in regard to an intelligent selection between an increase of the storage systems of Croton water and the possible procurement of an additional and larger supply from the Housatonic river."

If I add the shorter time of construction and the adaptability of the proposed structure to the construction of the head-works of the Aqueduct, the advantages presented by the new Croton dam, especially when they can be procured without additional cost, are sufficiently important to justify the recommendations made by your Engineer.

Respectfully submitted,

A. FTELEY, Chief Engineer.

CITY OF NEW YORK—FINANCE DEPARTMENT,
COMPTROLLER'S OFFICE,
November 11, 1890.

Hon. THEO. W. MYERS, *Comptroller:*

SIR—I have examined with care the report of Chief Engineer Fteley to the Commissioners of the New Aqueduct, under date of October 8, 1890, in relation to the "question of building a high masonry dam on the lower part of the Croton river," in connection with which he has, for the past two years, been investigating, by boring and otherwise, the character of the river bottom, as to its suitability for such a structure, and for a reservoir of such great depth.

The information given in the Chief Engineer's report is very interesting, and very valuable, and will be of great service hereafter.

As a final result of his observations and study of the question, Mr. Fteley recommends the building of a dam a short distance (1 88-100 miles) below the present Croton dam, which is to give a reservoir containing 16,000 millions of gallons.

This dam is estimated to cost, if built of masonry	$3,600,000 00
" " " earth and masonry	2,960,000 00

As general reasons for having a high dam and large reservoir in the lower part of the river, Mr. Fteley gives, first, the fact, which is admitted, that in no other way can the drainage be collected from the area not included within the water-sheds of the upper small reservoirs, estimated at 115 square miles; second, the alleged imperfection in the construction of the old Croton dam; and third, that, inasmuch as the important parts of the New Aqueduct system are now built in view of the construction of a high dam on the lower part of the river, the rest of the work should be made to conform to existing features.

With reference to these points, I will say, first, that there is no wisdom in impounding water unless we want to use it. New York is not at all interested in the amount of water running to waste over the Croton dam, so long as the city is supplied; second, as to the unsubstantial construction of the present dam, the fact that it has stood so long, when it has been tried by severer tests than it is likely to undergo hereafter, is a strong proof that the construction is much better than it has been sometimes considered. The reservoirs which are being built in the upper part of the water-shed will have the effect of relieving it from the heavy floods which it has been hitherto called upon to resist; third, it is true that there is a certain lack of finish in the present condition of things at Croton river, but I do not think so great an expenditure could be justified simply for appearances at that point. There is no doubt that, in the future, a high dam must and will be built at some point below the present dam, but this ought not to be done until the system which has been commenced in the upper part of the water-shed shall have been completed.

In the beginning, the idea was to construct the great Quaker Bridge dam, with its appurtenances, furnishing a reservoir of thirty-two billions capacity. This was to be followed up, *as needed*, by the upper reservoirs. The plan met with great opposition, and was postponed so long that it was found necessary to construct the Sodom and Bog Brook dams, in order to provide the storage which it was expected would be immediately necessary on the opening of the New Aqueduct. The Department of Public Works, thinking that this increase of storage might not be sufficient for immediate needs, commenced the Muscoot dam, Reservoir "A." The Commission then decided to build another, at the Titicus, and has recently given out to contract still another, Reservoir "D."

The dams above named will furnish reservoirs of the following capacities:

Sodom and Bog Brook, East Branch of Croton	8,000,000,000	gallons.
Titicus River	6,000,000,000	"
Carmel, Reservoir "D," West Branch of Croton	9,000,000,000	"
Muscoot River, Reservoir "A"	7,000,000,000	"
Total	30,000,000,000	"

With the present consumption of water in the city, say 150,000,000 gallons daily, of which 15,000,000 gallons come from the Bronx River system, the Sodom and Bog Brook Reservoirs, now approaching completion, would *alone* carry us satisfactorily through such a season as 1880–81, the minimum season in the matter of water-supply during the seventeen years from 1870 to 1886.

The Muscoot, or Reservoir "A," will probably be in readiness in two years, and the Titicus and Reservoir "D" will both be finished, it may reasonably be expected, in four years at the farthest.

These reservoirs are being built on what I consider proper principles of economy in expenditure, that is to say, they are being built as they are needed, except a little too fast, and the whole storage capacity of the upper part of the water-shed should be developed before the great and expensive structure is commenced on the lower part of the river.

When that limit of capacity is reached, whatever it may be—and I estimate that it will be sufficient to supply the city with 250,000,000 gallons per day in a season like that of 1880–81—the large dam, either at Quaker Bridge or at the location a short distance from it, recommended for consideration by Mr. Fteley, should be built, giving an additional 30,000,000 gallons of storage.

Thus the whole capacity of the water-shed will be brought to the city, *when it is required*, and in no other way can it be economically done, or with due regard to the present generation of taxpayers.

In a financial point of view I can see no propriety in the proposed construction, inasmuch as the works now in progress will answer all demands for a very considerable period, and, when they become inadequate, additional ones can be constructed at much less expense for the same capacity.

In an engineering view the proposed dam falls short of the requirements.

Respectfully,

EUGENE E. McLEAN, Engineer.

NEW YORK, November 19, 1890.

To the Honorable the Committee on Construction:

GENTLEMEN—In compliance with your resolution of November 12, 1890, that we investigate the question of the safety of the present Croton dam, we beg to report as follows:

From the few data at hand in regard to the construction of the present Croton dam, we agree that, although a large portion of the superstructure is of a substantial character, the foundation and especially the earth embankment at the north end are not built in such a manner as would be sanctioned by modern practice; the continuous joint between the supporting earth and the masonry and the absence of a core wall in the north embankment being features which have been avoided by the Department of Public Works and by the Aqueduct Commissioners in the construction of the dams in the upper part of the water-shed. It must be said, however, that the Old Croton dam has stood successfully for half a century, and that during that time heavy freshets have occurred, causing overflows which in two instances attained 77 and 81 inches in depth over the crest respectively, leaving between the higher level and the top of the earth embankment a margin of 1 foot 6 inches. The test of time is consequently the best recommendation in favor of the stability of the dam.

We submit herewith, for the information of the Commission, a copy of the only plan now on record as to the construction of the dam.

A flow of 6 feet 9 inches over the dam, if continued for twenty-four hours, would be equivalent to a sheet of water 1⅔ inches deep over the whole water-shed. There are on record, however, several instances of rain-falls in this part of the country which would produce a much larger flow. Among others, in October, 1869, there fell in the Connecticut valley, on two consecutive days, 8 to 10 inches of rain over an area as large, if not larger, than the Croton water-shed, which would produce a much more abundant overflow.

In the Conemaugh valley the flow at the ill-fated dam above Johnstown was for several hours at the rate of more than 9,000 cubic feet per second, equivalent to 6,000 million gallons per 24 hours, although the water-shed is only about 56 square miles. It is true that the flow on a much smaller water-shed is comparatively larger.

In similar conditions, the earth embankment of Croton dam would have been overtopped and washed away. The same result would follow in case of the breaking of one of the upper dams.

In view of the fact that occurrences of this description are extreme cases, Messrs. Birdsall and McLean believe that they are not probable, and that the Croton dam is sufficient, to all intents and purposes, to fulfill the duties that it is called upon to perform. Mr. Fteley, however, is of opinion that when the magnitude of the interests at stake is duly considered, possibilities, however remote, ought to be given full weight and be amply provided for.

Respectfully submitted,

GEORGE W. BIRDSALL, Chief Engineer, Croton Aqueduct.
EUGENE E. McLEAN, Engineer, Finance Department.
A. FTELEY, Chief Engineer, Aqueduct Commissioners.

On motion of Commissioner Scott, the same were ordered spread in full on the minutes and filed.

The Committee also presented the following :

NEW YORK, January 6, 1891.

To the Aqueduct Commissioners :

The Committee on Construction, to whom was referred the report of the Chief Engineer, relative to the building of a high dam on the lower part of the Croton river, hereby reports :

That the said report of the Chief Engineer was printed by order of the Commission, and a public hearing had thereon, in conformity to the requirements of section 2, chapter 490, Laws 1883. At this public hearing, of which notice was duly given by advertisement in the daily papers, no one appeared in opposition to the dam proposed by the Chief Engineer, and those citizens who did appear, warmly advocated the building of such dam.

The matter having been referred back to the Committee on Construction, a meeting of the Committee was held on November 12, 1890, for the consideration of the report.

At this meeting the Commissioner of Public Works presented a report made to him by Mr. George W. Birdsall, the Chief Engineer of the Croton Aqueduct, in which he opposed the proposed dam.

There was also presented and read a reply to Mr. Birdsall's report, made by the Chief Engineer of the Aqueduct Commission.

The Comptroller also presented a report made to him by Major E. E. McLean, coinciding, in the main, with the results reached by Mr. Birdsall.

The Committee then adopted a resolution referring to Messrs. Fteley, Birdsall and McLean the duty of investigating and reporting upon the safety of the present Croton Dam, and these gentlemen made such investigation and report.

All the reports above referred to have been printed by direction of the Committee and are submitted herewith.

Subsequently a second report on the same subject was made by Mr. Birdsall to the Commissioner of Public Works, and by the latter submitted to this Committee. This last-mentioned report is also submitted herewith.

The Committee have given to all the reports above mentioned the most careful consideration. They deal with the most important question yet to be determined, regarding the water-supply of this City.

To discuss this question intelligently, it is necessary to briefly revert to the history of the "Aqueduct Act" and the work already done and projected by the Aqueduct Commission.

The "Aqueduct Act," under which the Commission exists, known as chapter 490 of the Laws of 1883, is entitled "An Act to provide new reservoirs, dams and a new aqueduct, with the appurtenances thereto, for the purpose of supplying the City of New York with an increased supply of pure and wholesome water."

It was passed by the Legislature in response to the pressing demands of the public authorities of the City, and after the necessity for such an act had been certified to by an intelligent and impartial Commission of well-known citizens appointed under a resolution of the State Senate.

That Commission, after a careful examination of the whole subject, reported strongly and emphatically in favor of an immediate increase in the water supply of the City.

The act above referred to imposed upon the Aqueduct Commission two equally important duties:

First—To provide a New Aqueduct to bring water from the Croton river to this city.

Second—To provide sufficient dams and reservoirs to insure at all times a plentiful supply of water to flow through the aqueduct.

When the present Commission assumed office in August, 1888, substantial progress had been made only in the direction of discharging the first of these duties.

The New Aqueduct was apparently approaching completion, but already doubts had arisen as to the manner in which the work upon it had been done—doubts which subsequent investigation unhappily developed into certainties.

No progress had been made in the direction of supplying additional storage, except to put under contract one of the two dams necessary for the creation of the double reservoir at Sodom, in Putnam County.

The present Commission, in addition to taking such steps as were necessary to complete and repair the aqueduct so as to make it as good as required by the contracts for its construction, at once took up the question of furnishing an additional supply of water to flow through the aqueduct when completed.

As soon as possible a contract was let for the second dam necessary to complete the double reservoir at Sodom.

In considering what further provision should be made, the Commission learned that two projects or systems had for a long time been under consideration. One was to build a number of comparatively small dams throughout the water-shed of sufficient strength to assure permanent stability and safety.

The other was to build the much-discussed Quaker Bridge Dam, a structure of unexampled magnitude, which would conserve in a single reservoir enough water to insure for many years a sufficient daily supply, and which could be supplemented from time to time, as necessary, by the erection of smaller subsidiary dams in the upper water-shed.

This second plan had been for years earnestly advocated by the Department of Public Works, and by many distinguished engineers, and if it could have been begun at the same time that the aqueduct was begun would have been worthy of most serious consideration.

Upon inquiry, however, the Commission became satisfied that the erection of this dam would not only be very expensive, but would take a very long time, and that meanwhile the supply of water to the City would not be sufficiently increased for present necessities. Being convinced that the City's needs imperatively demanded an adequate supply of water at the earliest possible moment, the Commission felt itself compelled to adopt the plan which would most quickly achieve the desired end, and as soon as the necessary preliminary steps could be taken, executed contracts for two dams in the upper water-shed, one in the Titicus river at Purdy's Station, and the other in the west branch of the Croton river at Carmel. Meanwhile the Department of Public Works had evinced its apprehension as to the amount of water required by the City, by providing, independently of the Commission, for the construction of a reservoir on the Muscoot river.

The reservoirs projected and now under construction, as above recited, with those already in use, will serve to conserve substantially all the water that can be secured from the upper half of the water-shed.

The question now presented to the Commission is how best to conserve the water that can be obtained from the lower half of the water-shed.

As has been said, the project which has always been favored by the Department of Public Works has been the erection of the great Quaker Bridge Dam.

The Mayor's Commission of 1883, and the successive Boards of Aqueduct Commissioners, since the passage of the act of that year, including the present Commission, have taken much testimony relative to that proposed dam. From that testimony it appears that the work, while undoubtedly feasible, would be of extraordinary magnitude and difficulty, and would involve a very large expenditure of money and time.

Having arrived at the conclusion that the subsidiary dams at Sodom, Purdy's and Carmel should be built at once, the Commission instituted an exhaustive exploration of the bed of the Croton river from the present Croton Dam site to the proposed Quaker Bridge Dam site, with a view to determining whether a smaller and less expensive dam than the proposed Quaker Bridge Dam could not be built. These explorations were carefully conducted under the direction of the Chief Engineer, and have resulted in the selection of two available sites for large dams in addition to the proposed Quaker Bridge site.

Their respective characteristics and relative advantages are fully set forth in the report of the Chief Engineer, dated October 8, 1890, and herewith submitted. As will be seen in a perusal of that report, the Chief Engineer recommends the erection of a dam at the site designated as Location 2, a little less than a mile below the present Croton Dam, and it is upon the plan for a dam at that site that the public hearing has been had and this report is made.

The discussion upon the subject soon developed as the questions to be decided:

First—Should any dam be presently built at or near the present Croton Dam, or between it and the mouth of the Croton river?

Second—If such dam should be built, should it be located at the site recommended by the Chief Engineer, or at a point further down the river?

The determination of the first question involved two inquiries:

First—Whether a dam was needed for additional storage?

Second—Whether such a dam was needed for security against the disastrous consequences that would result from the destruction of the present Croton Dam; and this latter inquiry, in turn, involved the question as to the security of the present Croton Dam.

It will be observed that in his report of October 8 the Chief Engineer said:

"An additional and weighty argument in regard to the location of such a reservoir is that, although the present Croton Dam has rendered good service for half a century, it must be conceded that it is not built in such a manner as a structure should be on which depends the very life of New York, and it is necessary that it be replaced by a more substantial one."

The records of the Mayor's Commission of 1883, and of the Aqueduct Commission, show that one of the reasons most strongly urged by the advocates of the Quaker Bridge Dam why it should be built without delay, had been that the City should not be left dependent for its supply of water upon the stability of the old Croton Dam. It was with some surprise, therefore, that the members of the Construction Committee found two avowed advocates of the ultimate erection of the Quaker Bridge Dam challenging the Chief Engineer's statement as to the danger of relying upon the stability of the present dam.

The Croton Dam is to-day all that stands between the City of New York and an absolute water famine. If it were to be destroyed the aqueducts, both old and new, would be useless, and the storage reservoirs in the upper part of the water-shed would be of no value. The sole reliance of the city, until the dam could be repaired or a temporary dam constructed, would be the amount that might happen to be at the time in the Central Park Reservoir, and the small supply (about fifteen millions per day) received from the Bronx river.

The consequences that must necessarily follow from such a catastrophe need not be suggested in this report.

So important did this phase of the question seem to the Committee, that an investigation of the strength and stability of the old dam was ordered to be made by the Chief Engineer of the Commission, the Chief Engineer of the Croton Aqueduct and Major E. E. McLean, the adviser of the Comptroller on engineering questions.

These gentlemen concurred in a report dated November 19, 1890 (herewith presented), in which they agreed that "the foundation and especially the earth embankment at the north end, are not built in such a manner as would be sanctioned by modern practice," and that the best that can be said in favor of its stability in the future is, that it has not yet failed.

They also agree that if the conditions that prevailed in the Conemaugh Valley, in June, 1889, and produced the frightful Johnstown disaster, were reproduced in the Croton water-shed, or if one of the upper dams should break, the Croton Dam would inevitably be over-topped and carried away.

Messrs. Birdsall and McLean, however, express the opinion, that inasmuch as such disasters are rare and therefore improbable, the City can afford to take the chance. Mr. Fteley, on the other hand, expresses it as his opinion that, in view of the magnitude of the interests at stake, even possibilities should be guarded against.

The latter view is the one which commends itself to your Committee, and which has been indorsed by the highest engineering talent.

Mr. James B. Francis, a very eminent and well-known hydraulic engineer, testified before the Mayor's Committee on February 6, 1883, as follows:

"Q. By Commissioner Agnew—Then you do not think the present Croton Dam is secure?"

"A. I don't think it is a perfectly safe dam, as it would be if it was on the rock as it should be. I worked over that a good many years ago, and the quantity of water that fell in the water-shed. We had a great storm in 1859 that spread over the country that did a great deal of damage—more than any storm that we have had since—and I took pains, through the Smithsonian Institute and all the means I could, to get at the rainfall in different parts, and I found in an area of ten thousand square miles there were nine inches or more of water fell in about twenty-four hours. Now, if you should have such a rain as that in this water-shed, and you are just as liable to as not, it would carry away that dam."

Mr. Robert K. Martin, an engineer, who constructed the Baltimore water-works and tunnel, testified as follows before the same Committee, on February 7, 1883:

"Q. Have you examined the present Croton Dam?"

"A. I know its construction."

"Q. What do you think of its stability?"

"A. I think it is liable at any time to be carried away by a freshet."

Gen. George S. Greene, Sr., an engineer of acknowledged ability, once Chief Engineer of the Croton Aqueduct, testified before the same Committee on February 8, 1883, as follows :

"Q. What is your opinion as to the present Croton Dam, as to its stability?"

"A. Under ordinary circumstances it is very safe, *but it is not safe against any extraordinary flood.*"

The Construction Committee can reach but one conclusion in the face of such evidence as this. In its opinion, to halt now and leave the City open to a disaster which can be so easily averted would be fatuous, and would render the Commission open to well-deserved censure. Nothing short of absolute and unquestioned safety should be accepted as sufficient.

The conclusion that the Committee have reached on this question leaves it comparatively unimportant to discuss the question whether the proposed new dam is needed for storage purposes.

In the opinion of your Committee, however, a dam, at or near the point indicated, will be found necessary in the near future to secure an ample supply of water for the City.

Many statements and estimates have been laid before the Aqueduct Commission, from time to time, as to the amount of storage necessary for New York. These have varied widely.

Since the opening of the New Aqueduct in July last the consumption of water has increased about 33 per cent.; that is, from 115 million gallons a day to 150 millions; and complaint is still heard from large sections of the City that the supply of water is insufficient.

When the arrangements now understood to be in progress for increasing the supply in the "High Service" districts of the City shall have been completed, it is reasonable to assume that the consumption will be further increased.

It is conceded on all hands that a daily supply of at least 216 million gallons per day will be needed within a comparatively few years. But in case of a recurrence of a dry year, such as that which began in February, 1880, and ended in February, 1881, the whole yield of the river which could be conserved by the reservoirs now built or building would not aggregate 180 millions of gallons a day. So that to be abundantly sure of a sufficient supply a few years hence it will be imperatively necessary to construct a storage reservoir at some point in the lower water-shed. It may indeed be, that for a few years the dam now recommended will provide more water than is absolutely needed; but it is not probable that this condition will prevail for long, and while it does last, it will be a novel but not unwelcome experience to the people of this City to know that they are enjoying the benefits of a superabundant water supply.

Experience has shown that no community has yet been found to complain that it receives too much water.

Having reached the conclusion that a dam should be built near the mouth of the Croton river, both for security and for abundance, the only question left, is whether that dam should be the one recommended by the Chief Engineer, or the much-discussed Quaker Bridge Dam.

On this point the reasoning of the Chief Engineer commends itself to your Committee. The New Croton Dam will assure a sufficient supply for at least a generation, and for considerably more than that time, if the extremely conservative views of Mr. Birdsall be adopted. By that time the cost of the proposed dam will have been more than offset by the saving of the interest in the difference between the cost of the New Croton Dam and that of the Quaker Bridge Dam, and at the end of that time, experience will have taught us whether a further water supply should be sought by building the Quaker Bridge Dam, or by seeking elsewhere for a water-shed.

The Aqueduct Commission has performed but a part of the duty for which it was created, and that part is as yet uncompleted. The Aqueduct has been put into condition to run water, but there are a number of appurtenances and appliances yet to be finished. The other part of our duty, that of "providing new reservoirs, * * * for the purpose of supplying the City of New York with an increased supply of pure and wholesome water," is being performed with diligence, and is not yet completed.

In the opinion of your Committee, a dam, such as is recommended by the Chief Engineer, near the site of the present Croton Dam, constitutes the keystone of the water supply of this City, and its construction should not be delayed one moment longer than necessary.

We therefore recommend the immediate erection of an earth and masonry dam, to be known as the "New Croton Dam," at the point indicated by the Chief Engineer in his report of October 8.

J. C. DUANE, Chairman Construction Committee.

On motion of Commissioner Cannon, the report was approved and adopted and ordered spread in full on the minutes.

In connection therewith, the Committee recommended the adoption of the following resolution :

Resolved, That the report of the Committee on Construction relative to the construction of a high dam on the Croton river near the present Croton dam be and hereby is adopted, and that the plans and location recommended therefor by the Chief Engineer be and hereby are adopted and approved ; and the Chief Engineer be and hereby is directed to take the necessary steps for the immediate construction of said dam.

Commissioner Scott then stated that as the Comptroller had sent word to the Aqueduct Commissioners that he was ill and unable to be present, and had expressed a desire to be in attendance when the subject-matter referred to in the foregoing report was discussed, he moved that the resolution be laid on the table until the next meeting. Carried.

The Committee also presented the following communication received from the Chief Engineer :

NEW YORK, November 26, 1890.

To the Honorable the Committee on Construction:

GENTLEMEN—There are at present in the employ of the Commissioners thirty-six Inspectors. From twelve to fourteen men only are wanted to do the work now performed by Inspectors, the largest number of whom should be employed on the dams now under construction. Of the thirty-six Inspectors now on the pay-roll, fifteen are veterans of the late war, who, I understand, claimed to have a legal right to be employed in preference to all others. The result of the exclusive employment of the veteran Inspectors would be the simultaneous removal from the work on the dams and from special work on the line of men who have been for several years familiar with it at a time when, owing to the approach of winter and to the necessity of completing before the end of the year certain parts of the dams, especial care is needed. In view of the necessities of the work, I cannot recommend to the Commissioners to make such a sweeping change in their personnel, especially as there are among the veteran Inspectors men who do not, in my opinion, possess the superior requirements of ability and reliability desirable for the description of work now under construction.

On the other hand, the retention of the Inspectors, other than veterans now employed, would entail the continued employment of men whose services could now be dispensed with.

In view of the fact that the superintendence of dam work requires a higher grade of efficiency' the Commission has recently created the rank of Superintendents of Dam Construction, in connection with which it has submitted a number of names to the Municipal Civil Service Board for examination.

I beg to suggest that the necessary appointments be made from the eligible list now in the hands of the Civil Service Board. If such action were taken, I would recommend at the same time the appointment of five Foremen or Overseers for the supervision of the service of the Aqueduct.

I beg also to report that the services of J. P. R. Taaffe, Leveler, on Division No. 5, can be dispensed with on December 1, 1890.

I am, very respectfully,
A. FTELEY, Chief Engineer.

On motion of Commissioner Scott, the same was ordered spread in full on the minutes and filed.

The Committee also presented the following :

Rules and Regulations Defining the Duties of Superintendents of Dam Construction under the Aqueduct Commissioners.

Promotion, assignment to duty, suspension and transfer.

First—Superintendents of Dam Construction, on receiving notice of their promotion, shall immediately report in person to the Chief Engineer, who will assign them to duty in his discretion when necessity for their services arises, their pay to commence when they, severally, begin their duties under such assignment.

Report to Division Engineer.

After having been assigned to duty by the Chief Engineer, Superintendents of Dam Construction will report immediately for duty to the proper Division Engineer and receive instructions.

The Chief Engineer may, from time to time, in his discretion, temporarily suspend any Superintendent of Dam Construction if the necessity for his services ceases, or transfer any such Superintendent from one dam to another.

Agreement.

Second—All Superintendents of Dam Construction who accept promotion, shall, before being assigned to duty, execute an agreement with the Aqueduct Commissioners, binding themselves to faithfully perform their duties according to these Rules and Regulations, and obey the orders and instructions given to them by the Chief Engineer and his assistants in charge of the work. Such agreement shall be indorsed upon a copy of these Rules and Regulations, and shall refer to them as expressing the terms of the contract between the City and said Superintendents.

Residence.

Third—Superintendents of Dam Construction will be expected to arrange for their boarding-places, which must be located as near the work as possible, and make their residences known to the Division and Assistant Engineers directly in charge of the work where they shall be employed, so that they can be constantly in communication with the Division Engineer and with his assistants.

To be furnished with specifications.

Fourth—Each Superintendent of Dam Construction will be furnished with a copy of the specifications for the several kinds and description of work pertaining to the dam upon which he is assigned to duty, and he is expected to familiarize himself with the requirements of said specifications.

Pay.

Fifth—Superintendents of Dam Construction shall be paid at the rate of four dollars per day of eight (8) hours' work for the time actually occupied. Their pay to commence when they assume duties under the assignment of the Chief Engineer.

Hours of duty.

The hours of duty in each day are not limited to eight hours; the Superintendents being required to work as many hours per day as they shall be required by the Chief Engineer or by his assistants.

In case any Superintendent be required to work more than eight hours, he shall be paid at the rate of fifty cents per hour for each hour overtime.

No Superintendent of Dam Construction shall engage in any other business or occupation while assigned to duty, and the Superintendents shall hold themselves in readiness, that they may be assigned to any work in progress; and in order that no work may be done in their absence, it will be their duty to notify the Division Engineer through the assistant in charge of the work where they are employed of the progress of the work during regular daytime, or during extra time made by the contractors' workmen.

Absence.

Sixth—No absence during temporary stoppage of work by the contractors will be allowed without leave obtained from the Division Engineer or Assistant Engineer.

Diaries.

Seventh—Each Superintendent of Dam Construction will provide himself with a blank book, called a diary, which will be furnished by the Division Engineer, in which will be entered the name of the Superintendent, his residence, the date of his promotion, the dates when ordered to go on the work and where. They will state under each day's date upon what work they have been engaged for the day, the number of men employed daily upon the work as masons, laborers or otherwise; any interruption or suspension of the work, and the reason therefor; the progress of the work and the day of completion of such part of the work as the Superintendent may have been engaged upon.

Each Superintendent shall deliver every Monday to the Assistant Engineers in charge of the work where they have been employed, their diaries, and receive others to take their places.

All Superintendents who may be suspended or discharged shall deliver to the Division Engineers all books and papers relating to the work, and no Superintendent shall be entitled to pay or to have his name put on the pay-roll until all such books and papers have been surrendered to the Division Engineer on whose division he may have been employed.

All notes and memoranda in the Superintendents' diaries shall be neatly kept, and especial care shall be taken in this respect.

Work to be superintended.

Eighth—Superintendents of Dam Construction shall superintend the work to which they are assigned, both of excavation and construction, and shall see that all work of every kind and all materials used conform in all particulars to the specifications; and that all earth-work and embankments conform, both as to the materials used and their disposition, to the specifications; and that all special instructions of the Division Engineer or his assistants, as to the plans and methods of doing the work, and materials used, are complied with.

Imperfect work.

Ninth—Superintendents will report to the Division Engineer or Assistant Engineer, promptly, any attempt to use rejected materials which the contractor may persist in attempting to use after being notified, and the locality of all imperfect work that he may discover, so that the Division Engineer may issue proper instructions relative thereto.

Neglect on the part of contractors.

Tenth—Superintendents will immediately report any neglect or refusal on the part of the contractor or his representatives to conform to the specifications of the contract, also any damage or injury to persons or property done by the contractor or his representatives; how caused, and whether such damage was occasioned by the neglect or carelessness of the contractor or his men, or otherwise.

Doubts as to work.

Eleventh—In case of any doubt on any matter pertaining to the work, Superintendents shall immediately consult the Division Engineer or one of his assistants, and ask for instructions.

Disciplinary action.

Twelfth—Neglect on the part of any Superintendent to comply with the above rules will be considered sufficient reason for his dismissal; and should any Superintendent neglect his duties or pass any work as good which is inferior to the requirements of the contract, he shall, on it being discovered, be suspended and reported by the Division Engineer, through the Chief Engineer, to the Commissioners for discharge, or other disciplinary action.

Attendance.

Thirteenth—Each Superintendent shall be upon his work during the hours directed by the Division Engineer, or until relieved by another Superintendent.

On motion of Commissioner Scott, the same were adopted.

The Committee also presented the following communication received from the Chief Engineer:

NEW YORK, January 7, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—In reference to my report of November 26, 1890, as to the Inspectors employed on this work, and in view of the fact just made known to me by the President of the Aqueduct Commissioners that an eligible list of the candidates for the position of Superintendent of Dam Construction has been submitted to your Secretary by the Municipal Civil Service Board, I beg to recommend that all the Inspectors named on such list, with the exception of A. J. Sparrow, H. O. Cole and J. F. McDonough, be promoted to the office of Superintendent of Dam Construction; their pay to begin on the date that they are assigned to duty by the Chief Engineer. The eligible list referred to is herewith submitted.

I am, very respectfully,
A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution:

Resolved, That upon the recommendation of the Chief Engineer the following-named Inspectors of Masonry be and hereby are promoted to the position of Superintendent of Dam Construction, they having been certified by the Civil Service Commission as eligible for such promotion, viz.:

J. H. Slingerland,	Frank McCaffrey,	Daniel Clancy,
Rollin B. Vose,	Patrick Daly,	P. J. Moynihan,
J. J. Gaynor,	W. N. Cook,	W. H. Langler,
John R. Soper,	Andrew McCarthy,	Daniel Murray,
Isaac Rosell,	James McCartney,	John Holohan,
Gerald McMurray,	A. J. Fleming,	Isaac Thomas,
George L. Tillotson,	Timothy Capper,	John McKeon,
Thomas Graham,	Robert J. Gudeon,	M. Storen.
A. L. Crosby,	T. J. Powers,	

On motion of Commissioner Scott, the resolution was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That the grade or rank of Inspector of Masonry on the New Aqueduct be and hereby is abolished from and after the 15th day of January, 1891.

On motion of Commissioner Scott, the same was adopted.

The Committee also presented the resignation of Henry N. Hamilton, Assistant Engineer, to take effect on January 15, 1891.

On motion of Commissioner Tucker, the same was adopted.

The Committee also presented the following opinion rendered by Mr. Justice O'Brien :

By O'Brien, J.—Brown vs. Duane, as President, and others as Aqueduct Commissioners--The objections presented by respondents must result in the denial of the application. Unless the right to a writ of mandamus be clearly established, it will not be granted (People vs. Newton, 112 N. Y., 403). The petitioner does not show that he ever applied to the Aqueduct Commissioners for either his appointment to the position of Superintendent of Dam Construction or for an examination to said Commissioners or the Civil Service Board. "A subordinate body can be directed to act, but not how to act, in a matter as to which it has a right to exercise its judgment" (People ex rel. Francis vs. Troy, 78 N. Y., 41). Section 40, chapter 490, Laws of 1883 provides: "No person shall be appointed by the said Aqueduct Commissioners as Inspector or Superintendent who shall not be certified by at least three members of the Commission to be competent and fit for the duties of the position for which he is an applicant, and experienced in the subject-matter of the employment." The Aqueduct Commissioners Act (chapter 490, Laws of 1883), being a special and local statute, in the absence of a clear and unmistakable intent is not repealed by the subsequent general statute relating to veterans (McKenna vs. Edmundstone, 91 N. Y., 233). The Legislature placed the power to grant or refuse such certificate to any applicant in the discretion of the Commissioners, and with the exercise of such a discretion the Courts will not interfere (People ex rel. Hall vs. Village of Little Falls, 29 State Rep., 723). It must be remembered, however, that the question here presented has reference to a promotion and not to an original appointment. Taking, therefore, the Civil Service regulations bearing on promotions (chap. 354, Laws of 1883, amended by chap. 410, Laws of 1884, secs. 52, 53, 54 and 55), in connection with the original Veteran Act (chap. 312, Laws 1884, as amended by chap. 29, Laws 1886, and chap. 404, Laws 1887), the same question is presented as was decided in the case of the "application of Patrick McGuire for a mandamus" (19 N. Y. St. Rep., 431). The Court after commenting on these several acts says: "These provisions of law evince the intention and understanding of the Legislature to have been in the use of the word 'appointment,' as that has generally been employed in this legislation, it was intended to limit it to appointments as distinguished from promotions. The words themselves are generally so understood, when they are employed in this manner, a promotion being the advancement of an official or employee to a higher position, who had previously been appointed to one of an inferior degree. The language has been so employed in this legislation as to contrast one position with the other, and to designate by the word 'promotion,' a different office from that described or intended to be included within the word appointment, and in the construction of the law the Court is bound to carry out this theory as long as it has been evinced in this manner in its enactment. The intention of the Legislature is to be followed, and that intention is to be discovered by the language employed in the enactment of the statutes and their various provisions." This is a direct and binding decision which requires me to refuse the application. Denied, with costs.

On motion of Commissioner Cannon, the same was ordered spread in full on the minutes and filed.

On motion of Commissioner Tucker, the following report, laid on the table on December 17, 1890, was taken from the table and read :

The Construction or Executive Committee present the following communication received from the Chief Engineer :

NEW YORK, December 16, 1890.

To the Honorable the Committee on Construction :

GENTLEMEN—Herewith please find bills for the following-named parties : Hugh Getty, Nelson Warren, C. A. Bishop, O'Brien & Clark and Washburn, Shaler & Washburn.

The bill of $28.90 for Hugh Getty is for carpenter work and repairs to window sash, and for glass set at One Hundred and Thirty-fifth Street Gate-house.

The bill of Nelson Warren for $35.40 is for making and sharpening tools for use of the stone-cutters engaged in trimming the stop-plank grooves at Pocantico Gate-house.

The bill of $17.55 for C. A. Bishop is for sundry small articles of hardware, etc., which were obtained as required, and for the use of the Engineer Corps of the Second Division.

The bill of $31.26 for O'Brien & Clark is for shifting the west pipe line at One Hundred and Fourteenth street. This work was necessary, and could not be required under the contract. Their bill for $74.61 is for caulking and leading 48-inch manhole covers in One Hundred and Thirty-fifth Street Gate-house.

The bill of Washburn, Shaler & Washburn for $25.75 is for work done in hauling stone and sand for repairs for the cement testing-house at Reservoir M; also for delivering cord-wood at the office of Reservoir M; and for distributing boundary stones in Reservoir M. This work was necessary, and could not be required under the contract.

All of the above work was ordered by me.

I respectfully request that these bills be approved.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommend the adoption of the following resolution :

Resolved, That upon the recommendation of the Chief Engineer, the above-mentioned bills of Hugh Getty, amounting to twenty-eight dollars and ninety cents; Nelson Warren, amounting to thirty-five dollars and forty cents ; C. A. Bishop, amounting to seventeen dollars and fifty-five cents ; O'Brien & Clark, amounting to thirty-one dollars and twenty-six cents, and seventy-four dollars and sixty-one cents, respectively, and Washburn, Shaler & Washburn, amounting to twenty-five dollars and seventy-five cents, be and the same are hereby approved and ordered certified to the Comptroller for payment.

The same was then adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Secretary gave notice of the filing of a lien by the Warren Foundry and Machine Company against O'Brien & Clark for materials furnished in the construction of Section 16 of the New Aqueduct, amounting to $51,700. Which was ordered filed.

Commissioner Scott then moved that a vote be taken at the next meeting of the Commissioners on the dismissal of Inspectors Edward R. Scott and James L. Vallely, who were some time since given a hearing on charges preferred against them ; and that the Secretary be directed to notify said Inspectors of this action, in order to enable them to be in attendance with their counsel at that time. Carried.

The Commissioners then adjourned.

J. C. LULLEY, Secretary pro tem.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, January 14, 1891, at 3 o'clock P. M.

Present—The Mayor, the Comptroller, the Commissioner of Public Works, and Commissioners Duane, Tucker, Scott and Cannon.

On motion of the Commissioner of Public Works, the reading of the minutes of the last meeting was dispensed with at this time.

The Committee of Finance and Audit reported their examination and audit of Vouchers Nos. 6610 to 6615, inclusive, amounting to $14,861.20; also of bills contained in Vouchers Nos. 6616 to 6629, inclusive, amounting to $209.04.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee recommend the adoption of the following resolution:

Resolved, That, upon the recommendation of the Chief Engineer, Peter B. Lynt, employed as temporary laborer at two dollars per day, is hereby appointed laborer at two dollars per day, in connection with the service of the New Aqueduct.

On motion of Commissioner Scott, the same was adopted.

The Committee also presented the following:

The Construction or Executive Committee present the following communication, received from the Chief Engineer, and recommend that the same be spread in full on the minutes and filed:

NEW YORK, January 13, 1891.

Schedule of the flow at Croton Dam into the New Aqueduct as per request of the Chief Engineer of the Croton Aqueduct.

Since January 6, the date of my last report, the flow of water has been continued at the rate of 60,000,000 gallons per twenty-four hours until 5 P. M. of yesterday, when, by agreement with the Chief Engineer of the Croton Aqueduct, the gates at Croton Dam were shut and the water allowed

to be lowered in the aqueduct for the purposes of making certain gaugings which I find advisable for the better determination of the flow of water through the aqueduct.

A. FTELEY, Chief Engineer.

On motion of Commissioner Tucker, the recommendation was approved.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, the services of Miss Mattie Meadows, employed temporarily as typewriter at the Tarrytown office at $2.50 per day, be and the same are hereby continued for one month from January 16, next.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, W. W. Bullis is hereby appointed Journeyman Machinist, at $3 per day, vice William H. Johnson, discharged.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, the following named persons are hereby appointed to the position of Foreman at the rate of $4 per day for each day of actual work :

A. J. Sparrow.	H. O. Cole.
J. F. McDonough.	W. J. Walker.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following resolutions :

Resolved, That that part of the resolution adopted on January 7, 1891, promoting J. J. Gaynor to the office of Superintendent of Dam Construction, be and the same is hereby reconsidered and rescinded.

Resolved, That that part of the resolution adopted on August 6, 1890, dispensing with the services of J. J. Gaynor on August 15, 1890, as an Inspector of Masonry on the New Aqueduct, owing to the lack of work, be and the same is hereby reconsidered ; and the said Gaynor is hereby reinstated as an Inspector of Masonry and promoted to the grade of Superintendent of Dam Construction.

On motion of Commissioner Cannon, the same were laid on the table.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, C. E. Richards, formerly employed as an Inspector af Masonry on the New Aqueduct, is hereby appointed to the position of Skilled Laborer, at three dollars per day, to be detailed on the work under the charge of Division Engineer George B. Burbank.

On motion of Commissioner Scott, the resolution was amended by striking therefrom the word "skilled," and as amended was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Secretary, an indefinite leave of absence, without pay, is hereby granted to John R. Vernam, recently employed as a messenger in the office of the Aqueduct Commissioners.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, Mark Spencer is hereby appointed a laborer, at $2 per day, in connection with the service of the New Aqueduct.

On motion of Commissioner Scott, the same was adopted.

The Committee also presented the following :

NEW YORK, January 14, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—The Superintendents of Dam Construction whose names follow have been assigned to duty. Such assignment is to date from the 15th instant. All of them have been notified to report at the office of your Secretary to sign the necessary certificate.

Superintendents of Dam Construction.	Designation.	Division Engineer.
J. H. Slingerland	Reservoir M	Gowen.
A. J. Fleming	Reservoir D	Craven.
Thomas Graham	East Branch Reservoir	Burbank.
A. L. Crosby	East Branch Reservoir	Burbank.
W. N. Cook	East Branch Reservoir	Burbank.
Timothy Capper	East Branch Reservoir	Burbank.
John Holohan	East Branch Reservoir	Burbank.
W. H. Langler	East Branch Reservoir	Burbank.

Which was ordered filed.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, Inspector of Masonry Matthew Reilly be and he is hereby promoted to the position of Superintendent of Dam Construction, subject, however, to his passing the required examination for promotion required by the Municipal Civil Service regulations.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following preambles and resolution :

Whereas, The Commissioner of Public Works, in accordance with the provisions of section 29, chapter 490, of the Laws of 1883, did heretofore submit to the Aqueduct Commissioners a plan for the construction of a high masonry dam on the lower part of the Croton river, below the present Croton Dam ; and,

Whereas, The said Aqueduct Commissioners, having fully considered said plan, have decided to reject the same as so presented, and to adopt another and a different plan and location for said dam;

Resolved, That the Aqueduct Commissioners do hereby reject the said plan so as aforesaid

submitted by the Commissioner of Public Works, and do hereby request and direct the said Commissioner of Public Works to prepare and submit to the said Aqueduct Commissioners a plan for a high dam conforming to the plan marked "Y. Y." accompanying this resolution.

Whereas, The Commissioner of Public Works, in accordance with the provision of section 4 of chapter 490 of the Laws of 1883, heretofore submitted to the Aqueduct Commissioners a proper map marked "Exhibit D. D.", showing the land proposed to be acquired for the site of a proposed high masonry dam and reservoir on the lower part of the Croton river ; and,

Whereas, The Aqueduct Commissioners having considered said matter, are of the opinion that the same should be modified, and that only a single part or section of the land shown on said map should be acquired at the present time ;

Resolved, That the Aqueduct Commissioners do hereby modify said map marked "Exhibit D. D.", heretofore submitted by the Commissioner of Public Works as aforesaid, and do request and direct the said Commissioner of Public Works to prepare and submit to the said Aqueduct Commissioners for adoption six similar property maps containing a modification of said map ("Exhibit D. D."), and embracing only so much of the land shown on said map ("Exhibit D. D.") as is shown on the map or plan marked "X.", accompanying this resolution.

After consideration and discussion, on motion of Commissioner Scott, the action taken on the report submitted by the Construction Committee on the 7th instant relative to the construction of a high masonry dam and reservoir on the lower part of the Croton river, was reconsidered, and the report was then accepted.

Commissioner Scott then moved the adoption of the report and resolution accompanying the same, submitted by said Committee.

The Commissioner of Public Works moved as an amendment that the preambles and resolutions submitted this day be laid on the table, and that the whole subject-matter be considered at a special meeting of the Commissioners to be held on Thursday, the 22d instant, at 2 o'clock P. M.

The Secretary presented the following :

CITY OF NEW YORK—FINANCE DEPARTMENT,
COMPTROLLER'S OFFICE,
January 10, 1891.

JOHN C. SHEEHAN, Esq., Secretary, etc. :

SIR—Since my last notice of this import, the Comptroller has issued Additional Water Stock, viz. :

November 28, 1890	$100,000
December 26, 1890	150,000
Total	$250,000

taken by Commissioners of the Sinking Fund at par.

November 21st, ultimo, the Comptroller received from E. Ellery Anderson, Chairman of Commissioners of Appraisal, etc., $500 received by him from the Manhattan Elevated Railroad Company, for one year's rent in advance for use of room occupied by said Commissioners. This amount has been credited to the Additional Water Fund.

A warrant drawn to order of Clinton W. Sweet, dated November 17, 1887, for $1,554.59, was cancelled by the Comptroller November 17, ultimo, and the amount covered into the Additional Water Fund.

Respectfully,
I. S. BARRETT, General Bookkeeper.

Which was ordered entered upon the books of the Commissioners and filed.

The Comptroller, under date of December 31, 1890, gave notice of the issue of warrants for vouchers not certified to by the Aqueduct Commissioners for

Westchester County Section	$3,909 86
New York County Section	1,180 00
Reservoir "M"	375 00
Sodom Dam and Reservoir	3,814 50
Manhattan Island Section	1,505 47
Double Reservoir I	2,111 47

—leaving a balance to the credit of Additional Water Fund of $144,032.50.

Which was ordered entered upon the books of the Commission and filed.

The matter of the charges preferred against Inspector of Masonry Edward R. Scott was then taken up.

After consideration and discussion, on motion of the Commissioner of Public Works, said charges were dismissed by the following vote :

Affirmative –The Mayor, the Comptroller, the Commissioner of Public Works and Commissioner Cannon—4.

Negative—Commissioners Duane, Tucker and Scott—3.

The matter of the charges preferred against Inspector of Masonry James L. Vallely was then taken up.

After consideration and discussion, on motion of the Mayor, action thereon was deferred ; and Commissioner Scott was requested to ascertain why a lapse of time from September 8 to November 26, 1890, had occurred between the date of the alleged offense and the date of the charges preferred by the Chief Engineer, and report his findings to the Commissioners at as early a day as possible.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, January 21, 1891, at 3 o'clock P. M.

Present—The Comptroller, and Commissioners Duane, Tucker and Scott.

On motion of Commissioner Scott, the minutes of stated meeting of January 7, 1891, were ordered approved.

The Committee of Finance and Audit reported their examination and audit of Voucher No. 6632, being estimate for work done by contractors, amounting to $22.95; also of bills contained in Vouchers Nos. 6633 to 6649, inclusive, amounting to $1,082.87.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee recommended the adoption of the following resolution:

Resolved, That the action of the Chief Engineer in employing W. W. Bullis as Journeyman Machinist at $3 per day, from January 11 to January 14, 1891, vice William H. Johnson, discharged, be and the same is hereby approved.

On motion of Commissioner Scott, the same was adopted.

The Committee also presented the following:

The Construction or Executive Committee present the following communication, and recommend that the same be spread in full on the minutes and filed:

NEW YORK, January 20, 1891.

Schedule of the flow at Croton Dam into the New Aqueduct, as per request of the Chief Engineer of the Croton Aqueduct:

In my last report I stated that the gates at Croton Dam were closed on the evening of the 12th instant for the purpose of making certain gaugings. The gates at Croton Dam were opened again on the evening of January 14, and a flow of 60,000,000 gallons per twenty-four hours resumed.

During the time that the flow was stopped I caused gaugings to be done under the direction of Deputy Chief Engineer George S. Rice, at Shaft 19A, and also at Shafts 25 and 26, to ascertain the amount of water which reaches the Aqueduct from Croton Dam to the sections under pressure, and also the amount of water lost by percolation in the circular part of the Aqueduct. Without entering into the details of the gaugings, I can report that, at this time of the year, the resultant gain in the supply for the whole length of the Aqueduct is very nearly 4,000,000 of gallons per twenty-four hours, exclusive of the percolation, which, although not exactly computed as yet, will be found to be in the neighborhood of 152,000 gallons per day.

A. FTELEY, Chief Engineer.

On motion of Commissioner Tucker, the recommendation was approved.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Special Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Thursday, January 22, 1891, at 2 o'clock P. M.

Present—The Mayor, the Comptroller, the Commissioner of Public Works, and Commissioners Duane, Tucker, Scott and Cannon.

The meeting was called to consider the report of the Construction or Executive Committee, submitted on January 7, 1891, recommending the immediate erection of an earth and masonry dam, to be known as the "New Croton Dam," at a point recommended by the Chief Engineer in his report of October 8, 1890.

On motion of Commissioner Scott, said report and the preambles and resolutions submitted on January 14, 1891, were ordered taken from the table.

Whereupon, Commissioner Cannon offered the following resolution :

Resolved, That it is the sense of this Commission that a high dam should be built as soon as possible below the present Croton Dam.

The Comptroller presented the following preambles and resolution as a substitute for said resolution :

Whereas, The report of Chief Engineer Fteley, of the Croton Aqueduct Commission, recommends that a dam be built about one mile below the location of the present Croton Dam for the purpose of securing additional water supply to the City of New York, at a cost of about $3,600,000 ; and

Whereas, George W. Birdsall, Esq., Chief Engineer of the Croton Aqueduct, in a report dated October 21 to the Commissioner of Public Works, declares that a sufficient amount of storage capacity will be created upon the completion of the reservoirs now under construction in the Croton Valley to provide an ample supply for this city for the next twenty years ; and

Whereas, The opinion of Chief Engineer Birdsall is concurred in by Eugene E. McLean, Esq., Engineer of the Finance Deparnment ; and

Whereas, The construction of a dam at the point indicated by Mr. Fteley would furnish no additional drainage area, and only additional storage capacity for sixteen thousand million gallons, which additional water would not be required for at least twenty years; therefore be it

Resolved, That, in the opinion of this Board, it is inexpedient and uneconomical to erect at this time a dam at the point indicated by Chief Engineer Fteley.

In moving the adoption of the same, the Comptroller spoke as follows:

Mr. PRESIDENT—I beg to herewith submit a report, which has been prepared by Engineer McLean of the Finance Department, which finds the present construction of the proposed dam unnecessary.

The two chief arguments advanced in favor of the immediate construction of the new dam would appear to be, first, that it is essentially required to provide against the possible failure of the Croton Dam; and, second, that the growth of our population entails demands for increased storage of a water supply, which it alone can furnish.

To both of these propositions I take the strongest exception. Waiving entirely the fact that the Croton Dam has for fifty years borne practical testimony to its strength and reliability, and that by engineers of undoubted repute it has been and still is pronounced adequate to resist every and all strain to which it is in any wise liable to be subjected, I thoroughly concur with the Chief Engineer of this Board that slightest possibilities where matters of such vital importance are concerned should be as carefully provided for as the strongest probabilities. In other words, that expense alone should not be allowed for an instant to stand in the way of due provision for the wants and safety of our citizens.

Admitting, therefore, that there may be grounds for believing that, under extraordinary, but not impossible, conditions, the Croton Dam might fail to stand the test imposed, I am quite of the Commission's mind that no time should be lost to protect our city from the disastrous consequences which would result. It is an imperative duty, neglect of which no plea of economy could excuse. But it nowhere is shown that such protection can alone be secured by the erection of the proposed dam. If the Croton Dam be weak, strengthen it; if parts of it are faulty in construction, rebuild them. In other words, I am opposed to an expenditure of millions to accomplish results which can be secured by an expenditure of thousands. A minimum outlay of $3,660,000, if one of $150,000 will provide a full measure of security to the Croton Dam, cannot be accounted a wise precautionary measure, but must be regarded rather as extravagance, deserving, as it would indubitably receive, public condemnation.

Any measure looking towards necessary alterations in the Croton Dam, called for by defects in the construction, or by its possible inadequacy to meet every requirement of safety, should receive immediate and unanimous support; for delay in providing such alterations would be almost criminal, once their necessity is held to have been demonstrated. But the assertion that, because the absolute security of the Croton dam is questioned, a necessity for the proposed new dam is imperative, is in may opinion unsubstantiated by any proof.

It appears evident that, by the reservoirs now in course of construction or authorized to be built, the additional ones which can be constructed comparatively quickly and cheaply on the sites already located, and others for which available sites are plentiful, should a need for their construc-

tion arise, a provision for storage will have been made amply sufficient for the most liberally estimated needs of at least a generation to come.

"But," it has been argued, "even if the immediate construction of the new reservoir is not absolutely imperative, it is most highly desirable, and it is certain to be required in the future."

Up to October last, the New Aqueduct had already cost the city $23,950,000, bonds for that amount having been issued. The estimated cost of the dams and reservoirs (including land, construction and the roads and bridges entailed), already authorized and under contract, at Purdy's, Carmel and Amawalk, upon an ultra-conservative basis, is $1,258,000 for the first named, $844,500 for the second, and $668,700 for the third, a total for the three of $2,771,200, making the outlay for the New Aqueduct already incurred or authorized, $26,721,200. Disregarding entirely the many claims against the City in course of litigation, the further certain and necessary expenditure in connection with the work remaining to be done makes it evident that nearly, if not quite, $28,000,000 will be required.

At three per cent., the interest charges on the bonds representing this expenditure, would amount to some $810,000 per annum; and as all but $415,000 of these bonds must be redeemed within twenty years from their date of issue, it follows that for that period of time at least there must be raised by taxation yearly from $1,200,000 to $1,500,000, to provide for interest charges, and the redemption of the annual instalments of the bonds in question.

It is quite true that we owe a duty to posterity as well as to ourselves. It is quite true that any policy which regards the immediate present alone, is short-sighted and selfish to a degree deserving reprobation. But, as the city's financial representative, I feel bound to strongly protest against the imposition of the proposed additional outlay upon the tax-payers of the New York City of to-day, burdened, as they already are, to the extent I have shown, upon no better grounds than that posterity will thereby be enabled to enjoy, free of cost, the benefits it is to receive at our hands.

The same arguments which obtain against the immediate construction of the proposed new Croton Dam apply to the Quaker Bridge Dam with added force, as the outlay for the latter would be far greater. In my opinion, the erection of either dam is premature, for by the completion of the reservoirs now under contract and construction, the city is assured a daily supply of some 235,000,000 gallons, sufficient, upon the basis of present per capita consumption, for the wants of 2,798,000 people—a total of population which cannot be conservatively predicted for twenty years to come. There also remains a large portion of the "upper Croton water-shed," where, by the building of supplementary reservoirs, an ample additional supply of storage may be easily and cheaply obtained to more than meet all demands arising from any unexpected increase in the city's growth, from that which has been liberally estimated. In view of these facts, I have no hesitation in strongly opposing any construction of elaborate new dams at an enormous expense, until the exhaustion of the resources of the Upper Water-shed conserved by these smaller reservoirs shall be prefigured. Then, and in my opinion, then only, it will be time to build a gigantic dam below the present one, to be the crowning work in the absorption of the entire Croton Water-shed supply.

The construction of the proposed dam has been stated to be only an excuse for the continuance of this Commission's existence. This assertion I stamp as emphatically untrue. Such an excuse—any excuse—is not needed. Manifold duties remain to be performed. The superintendence to completion of the works now under construction, and the defense of the City against the attacks of claimants who seek to gain, by the intricacies of the law, what justice has denied—these alone, did

no others exist, are tasks amply warranting the Commission's continuation. Under this Commission New York City will enjoy, for the first time for years, an amply water supply. Under this Commission, or under the wise provisions already ordained by it, New York City will continue to enjoy, for at least a double decade of years, an ample supply, increasing commensurate with the city's growth. Let then its labors continue. Let it repair where repairs are required. Let it extend where extensions are entailed. Let it construct where construction is compelled. But let it expend only where expenditure is essential, and purchase no laurels attending triumphs of engineering skill at an unwilling public's expense.

The following is the report of Engineer Eugene E. McLean, referred to by the Comptroller:

CITY OF NEW YORK—FINANCE DEPARTMENT,
COMPTROLLER'S OFFICE,
January 17, 1891.

Hon. THEO. W. MYERS, *Comptroller:*

SIR—On the 1st August, 1888, I had the honor to address you on the subject, "Shall the Quaker Bridge Dam be built at present or at some future time?" My investigations of the matter showed that although the reservoir then contemplated, involving the erection of a dam exceeding in magnitude any heretofore constructed, would be necessary in the future, in order that the City of New York should avail itself of the full capacity of the Croton water-shed, it was not wise, in a financial point of view, that the great expenditure should be made in the then existing circumstances. The reason then given was that the necessary storage could be more cheaply and as efficaciously obtained by constructing reservoirs in the upper part of the water-shed, successively, as they might be needed.

In my report of that date and in subsequent ones made in reply to the then Chief Engineer, I think the position I assumed was clearly demonstrated. A public hearing was had on the matter, the result of which was that, though no definite conclusion was announced by the Aqueduct Commissioners, no action was taken by them. Now, on the report of the present Chief Engineer, of the 8th of October last, it is proposed by the Committee on Construction of the Aqueduct Commissioners to build a high dam a little less then a mile below the present Croton Dam, which will furnish a reservoir containing 16,000 millions of gallons, at an expense, if constructed of masonry, with appurtenances, not including the land, of $3,660,000, and, if of earth and masonry, as recommended, $2,960,000. The probable time of construction, if of masonry, four years, and if of earth and masonry, three or four years.

The Construction Committee, in its report proposing the high dam and reservoir, above referred to, under date of January 6, 1891, adopts certain premises and conclusions that may admit of question.

For instance, it says, "the act above referred to (chapter 490, Laws of 1883) imposed upon the Aqueduct Commission two equally important duties:

"1st. To provide a New Aqueduct to bring water from the Croton river to this city.

"2d. To provide sufficient dams and reservoirs to insure at all times a plentiful supply of water to flow through the Aqueduct."

The second of the above propositions is somewhat strained, as the law only requires "one or more dams and reservoirs to retain such water." At the same time, the law gives power to build such dams and reservoirs as may be necessary, but only for an "increased supply," and not necessarily for the entire future.

I question the conclusion in the report that "the reservoirs projected and now under construction, as above recited, with those already in use, will serve to conserve substantially all the water that can be secured from the upper half of the water-shed."

"The question now presented to the Commission is how best to conserve the water that can be obtained from the lower half of the water-shed."

By Mr. Fteley's report, the whole water-shed

Above Quaker Bridge Dam is	377.80	square miles.
Below Croton Dam it is	24.30	"
Above Croton Dam, from which storage can only be obtained on Croton river	117.46	"
Leaving for the upper water-shed	237.04	"

It will thus be seen that "the upper half" of the water-shed referred to is actually about two-thirds of the whole of the water-shed above the Croton Dam, and not "one-half," as might be inferred from the report, and that the "lower half" mentioned is actually about one-third.

As I have stated in my report of the 11th November, 1890, the following reservoirs are now in the course of construction:

Sodom and Bog Brook, East Branch of Croton, capacity	8,000,000,000	gallons.
Titicus river, Reservoir "M"	6,000,000,000	"
Carmel, Reservoir "D"	9,000,000,000	"
Muscoot river, Reservoir "A"	7,000,000,000	"
Total	30,000,000,000	gallons.

Besides these sites for reservoirs, Chief Engineer Birdsall, of the Croton Aqueduct, gives "K" and "L," "N" and "O," aggregating in capacity 14,200,000,000, and "H" with a capacity of 2,500,000,000, making in all 16,700,000,000, or 700,000,000 more than the proposed reservoir.

In addition to these there are many small valleys that could be utilized for reservoirs, as they may be needed, at comparatively small expense.

With these facts before us, I think the statement of the report that the "reservoirs projected and now under construction will serve to conserve substantially all the water that can be secured from the upper half of the water-shed," is somewhat misleading.

The questions propounded by the Committee are:

"1st. Whether a dam was needed for additional storage?

"2d. Whether such a dam was needed for security against the disastrous consequence that would result from the destruction of the present Croton Dam? And this latter inquiry in turn involves the question as to the security of the present Croton Dam."

The Committee comes to the conclusion that "nothing short of absolute and unquestioned safety should be accepted as sufficient." After reaching this conclusion, it "considers it comparatively unimportant to discuss the question whether the proposed new dam is needed for storage purposes," and dismisses what would appear a vital question with general remarks.

"Absolute and unquestioned safety" is an extreme requirement for an engineering work of this nature; but having closely examined the only plan existing of Croton Dam, showing the method of its construction; and taking into consideration the fact that it has resisted all attacks made upon it for fifty years, without the slightest sign of failure, in any respect, I believe it to be as nearly absolutely and unquestionably safe, within a certain limit, as any structure can be. The limit I give is, that the freshet shall not go higher than the top of the earth portion at the north end.

I enclose herewith diagrams of this work, and, in order not to burden this report, I attach to them the description given by Schramke of the construction of the dam.

In forming a judgment of this structure one person might prefer a rock foundation, but he would not be willing to condemn utterly "hard-pan" with the fact before him that this bottom, whatever it is, has shown no leak or weakness of any sort in the fifty years of its existence. Another might object to the crib-work, as not being the best modern practice; but he would scarcely venture to condemn it on examination of the plans, with the knowledge of how thoroughly it was constructed, and under what distinguished superintendence, with the fact which must always be taken

into consideration that these cribs have carried their burden of stone without a symptom of yielding for half a century.

Another might object to the ten-foot concrete wall, thinking it ought to be something else, but he too must hesitate when he contemplates the work it has faithfully performed for so long a time.

All must acknowledge that the earth part has grown more and more solid with age, and that it is perfectly secure, so long as it is not overflowed.

In estimating the strength of this structure it must be taken into consideration that its days of greatness have passed. Formerly it was something that people went out of their way to see, but now, when they hear of dams one thousand five hundred to one thousand seven hundred feet long, with walls of stone one hundred and eighty feet above the river bed, and extending ninety feet below it, this sinks into insignificance. It is only fifty feet high, and about four hundred feet long.

I have said this dam is as near being absolutely and unquestionably safe as any structure can be, within certain limits. As is shown by the diagram the north end of the dam is entirely of earth, not even having a central core of masonry, as called for in modern practice. If the water should rise above it, and continue for any length of time, that portion would undoubtedly be washed away. Possibly a nine-inch waterfall, extending over the whole water-shed, might do it, possibly not.

The highest point the water has reached above the crest, as far as known, is eighty-one inches (six feet nine inches), coming within one foot six inches of the top of the bank. There is no record of the extent of the rain-fall which caused this rise.

I have gathered from the records of the Department of Public Works the following statistics as to the height of water over the crest at different times:

January 8, 1874, height over crest, eighty inches.

January 9, 1874, height over crest, sixty-seven inches, six inches rain-fall in twenty-four hours.

March, 1876, height over crest, sixty-three inches.

April, 1876, height over crest, sixty inches.

August, 1874, height over crest, sixty inches, five inches rain-fall in twenty-four hours.

December 11, 1878, height over crest, seventy-four inches, six inches rain-fall in twenty-four hours.

February 13, 1881, height over crest, sixty-seven inches.

September 24, 1882, height over crest, sixty inches, eleven inches rain-fall in two days.

February 21, 1888, height over crest, sixty-six inches, three inches rain-fall in twenty-four hours.

January 12, 1891, height over crest, sixty inches.

Six inches of rain-fall over the whole area of the water-shed above Croton Dam amounts to more than 36,900 millions of gallons, forty per cent. of which is 14,700 million gallons. The nine-inch rain-fall spoken of by Mr. Francis would amount to over 55,350 millions of gallons, forty per cent. of which is 22,140 million gallons.

If we assume that forty per cent. of these rain-falls will reach the river and flow to the dam, with the regularity of their fall, there would arrive, each hour, from the six-inch rain-fall 615 million of gallons, and from the nine-inch rain-fall, 921 million gallons.

The velocity of water over a weir, when its depth reaches eight feet, is not known, but if we assume it to be fifteen feet per second, the discharge at the Croton Dam with eight feet of depth would amount to 875 million gallons per hour, and with sixteen feet per second it would be 933 million gallons per hour. According to this the six-inch rain-fall would not be alarming, and it has heretofore been resisted; the nine-inch rain-fall would place it in doubt.

This nine-inch rain-fall over the whole shed is amongst the possibilities. To guard against this possibility I cannot consider it wise, in a financial point of view, to expend $3,660,000 when the weak part extending over only 125 feet, could be strengthened so as to meet all possibilities, at a cost not exceeding $150,000.

Even supposing this dam to give way, I would not apprehend the water famine predicted. To deal a little in probabilities—it is probable, nay almost certain, that in the event of a freshet over-topping the earth portion, that part alone would be washed away. I would ask how long it

would require the City of New York, with unlimited resources, and with the water famine in view, to erect a temporary dam to fill up this little gap of 125 feet? certainly not more than two days, or three at the farthest. During that time the reservoirs at Central Park could amply supply us.

Suppose further, that in addition, the whole of the 180 feet up to the part founded on rock should go, making in all 305 feet, I would ask how long would it require to erect a temporary dam? not longer than five days at the farthest.

With regard to the first proposition of the Committee, "Whether a dam was needed for additional storage?" I report as follows:

The storage provided for in the four reservoirs above mentioned, which is in addition to the 9,541 million at present in use, is 30,000,000,000. The Chief Engineer of the Croton Aqueduct, Mr. Birdsall, in his report of the 21st October, 1890, states that "the present yearly increase in the consumption of water is 3,000,000 gallons per day, which would require, in very dry years, 750,000,000 gallons additional storage capacity each year. The storage reservoirs now in course of construction or under contract will provide for the storage required for the next twenty-two years, and if the supply of water for the last eight years is taken as a basis, they would furnish the necessary storage for the next forty years."

This opinion, coming as it does, from one who has been intimately associated with the water supply of the city for the last twenty years, and has been in immediate charge, as Chief Engineer, for over seven years, is entitled to great weight.

Mr. Church, former Chief Engineer of the New Aqueduct, gives as the amount of storage necessary to supply the city with 240 million gallons daily, under the same conditions as existed in 1880, the year of minimum supply, as 37,125,439,100 gallons.

Chief Engineer Isaac Newton gives the additional amount of storage necessary to supply 250 millions daily, under the same conditions as existed in 1880, as 34,577 million gallons (see Table 1 accompanying his report of February 21, 1883).

In Appendix "B," accompanying the same report, he gives 33,239,471,000 as the necessary amount of storage for supplying 244,540,000 gallons daily.

Below I give an extract from Table 3, accompanying the report of the Commissioners of the New Aqueduct of 1887, giving the average daily flow of Croton river for the years 1880 and 1881, and showing the quantities necessary to be drawn from reservoirs in order to furnish a supply to the city of 250,000,000 per day:

	1880.		1881.	
	Daily Flow of Croton River.	Amount Necessary to be Drawn from Reservoirs.	Daily Flow of Croton River.	Amount Necessary to be Drawn from Reservoirs.
January	520,688,800	.....	143,763,600	3,293,328,400
February	604,796,000	.....	906,294,200	.....
March	570,695,500	.....	1,152,429,800	.....
April	411,193,300	.....	367,615,200	.....
May	185,883,000	1,987,627,000	262,429,100	.....
June	102,469,400	4,425,918,000	325,929,600	.....
July	102,165,600	4,582,866,400	109,261,200	4,362,902,800
August	97,725,300	4,720,515,700	98,918,800	4,683,517,200
September	97,911,100	4,562,667,000	98,997,800	4,530,066,000
October	97,023,100	4,742,283,900	98,950,900	4,682,522,100
November	112,545,300	4,123,641,000	93,015,600	4,709,532,000
December	101,778,900	4,594,823,100	327,267,800	.....
Total required	.....	33,740,342,100	.....	22,968,540,100

The above tables agree very nearly with the computation of Chief Engineer Newton, and show that,

In order to provide for a supply of 250,000,000 gallons a day we have to furnish 3,740,342,100 storage in addition to present arrangements.

By a similar calculation, I find that, in order to supply daily 235 million gallons, storage would be required for 30,065 million gallons.

We are drawing now from the Croton River Aqueduct about 135 million gallons per day, and from the Bronx river system 10 million gallons, making a total of 145 millions. When the full supply is given, the amount will be 151 million gallons per day. Taking the population of the city at 1,655,598, as given by the Health Department in its report published in the CITY RECORD of January 7, 1891, this supply is at the rate of 91 gallons per capita.

With this per capita, an increase of 100,000,000 gallons per day would represent 1,111,111 persons.

Assuming an increase of 30 per cent. per decade in the population of the city, and starting with 1,655,598 as above, the city will have, in twenty years, 2,797,960 inhabitants, being an increase of 1,142,362.

These figures appear to me to lead to the following definite conclusions:

1st. That the reservoirs now in course of erection will provide, within a small amount, sufficient storage for an increase of 100 million gallons per day.

2d. That at the present rate per capita this increased amount will supply 1,111,111 persons.

3d. That at the assumed rate, 30 per cent. per decade, this increase of population will be reached in about nineteen years.

4th. That the reservoirs now in course of erection will be sufficient for at least that time.

When all the reservoirs that can be suitably built in the upper water-shed shall have been erected, then the great dam should be constructed at Quaker Bridge, or at the locality a short distance above, selected by Mr. Fteley, which will furnish 30,000 million gallons of storage.

Respectfully,

EUGENE E. McLEAN, Engineer.

CITY OF NEW YORK—FINANCE DEPARTMENT,
COMPTROLLER'S OFFICE,
January 22, 1891.

Memoranda for the Comptroller.

1. Dam and appurtenances near Purdy's, on Titicus river, Reservoir "M":

Amount under contract	$933,000 00
To be expended for land, 900 acres, at $250	225,000 00
For roads, bridges, etc	100,000 00
Total	$1,258,000 00

2. Dam and appurtenances, including auxiliary dam, near Carmel, Reservoir "D":

Amount under contract	$480,000 00
To be expended for land, 1,300 acres, at $165	214,500 00
For roads, bridges, etc	150,000 00
Total	$844,500 00

3. Dam and appurtenances, near Amawalk, Reservoir "A," including roads, bridges, etc.:

Amount under contract	$540,000 00
To be expended for land, 780 acres, at $165	128,700 00
Total	$668,700 00

Total under contract for the above three reservoirs	$1,953,000 00
Estimated total for land	568,200 00
For roads, bridges, etc	250,000 00
Total for the three reservoirs	$2,771,200 00

The above estimates for land and roads, bridges, etc., are made by the Chief Engineer, Croton Aqueduct, Mr. Birdsall, and the "amounts under contract," are the engineers' estimates calculated on the lowest bids, all in round numbers.

Respectfully,
EUGENE E. McLEAN, Engineer.

Schramke's Description of the Construction of Croton Dam.

The Croton Dam: At the above-mentioned point the dam, plate II, figure 4, was erected in order to raise the water and to form the Croton Lake. Figure 3 shows the profile of the river. At first a length of only ninety feet was given for the dam B, and this part was erected after the profile of figure 1, with a construction similar to that of figure 5, extending then only from a to b, figure 3, occasion for which was given by the rock lying here, affording a good foundation. The remainder of the river profile to d was to be filled with an earth embankment. A considerable freshet, however, carried away this embankment when partly completed, and it was resolved to extend the stone dam one hundred and eighty feet further to C. For the erection of this part, A, figures 3 and 5, the bottom of the river was cleared from mud and boulders, and the piers C and D, of twelve-inch hemlock timber successively built up, the walls were connected together by ties and filled with stone closely packed in, the top was covered with six-inch plank of white pine and tree-nailed; upon this planking the timber piers F and G were erected, but only "F" covered with plank. While erecting these piers, the space E was filled with concrete and the piers near the top connected with ties. Both these piers, together with their filling of concrete being the armature of the dam, served at the same time for coffer-dam against the water above. Against G, another timber pier, H, was in like manner constructed, with but one timber wall in place of the other, anchors of round timber were laid in and with the ties joggled together. The timber of these piers is of hemlock, twelve inches by twelve, the ties of white oak seven inches thick at the smaller end, framed with single dove-tails four inches thick, figure 8, and fastened with one-inch treenails, which are placed ten feet from centre to centre; the pier timber, figures 6 and 9, are treenailed thirty inches deep, with two-inch treenails of white oak; these nails are sometimes put nearer together, and the ties likewise; the planking was of white pine. When the timber piers had reached a certain height, the piers K K, of four compartments, were put down, two of which, the nearest to low water, were packed with stone, the two others were filled with concrete, and formed the coffer-dam against the water below the dam; the courses were of twelve by twelve inch hemlock, the ties of oak eight inches at the smaller end and six feet apart from centre to centre, the treenails of the squared timber the same. The uppermost of them were made of elm and white oak, treenailed every three feet thirty inches deep, two and one-half inches in diameter. The upper trees, figures 7 and 9, are of elm twelve inches square. To this course of ties, a bed-timber of white elm is joggled and secured by iron screw bolts, figure 9. Across these bed-timbers or caps an apron planking of six inches elm is fastened by one and one-half inch locust treenails of thirteen inches in length. Against the rear of this timber-pier the one marked L was erected; only against the backwater it has a regular timber-wall, figure 6. The ties of it were secured by anchors. A part of the apron planking of this pier is laid horizontally in connection with the apron of the pier K; the remainder is put three feet lower, figure 5. After the pit had been laid dry by pumps the ground and the space at f were filled in with concrete and leveled off. On this bed the

body of the dam was by degrees erected of hydraulic stone masonry according to the bond, figure 10, and the courses of the face stone for the weir laid down. This face work is of granite, cut with such closeness as to allow the stone to be laid with a joint not exceeding three-sixteenths of an inch. The masonry is laid in horizontal courses to three feet from the extrados of the face work, where it is in courses corresponding with the radii. In front of the lip of dam below the head water, a fore embankment, figures 1, 2 and 5, was formed of earth, and its upper part secured with a dry stone pavement two feet thick.

In the part of dam first erected, B, figure 3 at b and figure 2 at b, a waste weir is constructed, in order to draw off the water of the lake from a greater depth. It consists of a well with culverts, having two sets of gates, all of which is protected with a small stone house, figures 2 and 3 at b, which can be reached by the bridge B, figures 1 and 3.

At a distance of three hundred feet from the lip, a secondary dam, figures 1 and 2, is constructed. It is erected of round timber, filled with dry stone. The object of this secondary dam is to divide the head of water by means of the water-basin formed by it, to break the body of water running over the weir and to keep the woodwork of the timber piers K and L under water. Near the left shore a waste-weir is constructed in this dam, in order to let off the water from the basin, when required.

Mr. Ambrose Snow then requested permission to present certain resolutions adopted by the New York Board of Trade and Transportation.

On motion of Commissioner Cannon, it was ordered that said resolutions be received and read, as follows:

ROOMS OF THE NEW YORK BOARD OF TRADE AND TRANSPORTATION,
NEW YORK, January 21, 1891.

At a special meeting of the New York Board of Trade and Transportation, held this day, called to consider "The completion of the work in the hands of the Aqueduct Commission for furnishing a water supply for this city," the following resolutions were unanimously adopted, and a committee of twenty appointed to present the same to the Aqueduct Commission:

Resolved, That, in the opinion of the Board of Trade and Transportation, the new Croton Dam recommended by Chief Engineer Fteley in his report of October 8 last, and also by the Construction Committee of the Aqueduct Commission, J. C. Duane, Chairman, ought to be proceeded with and built by said Commission with the least delay practicable;

Resolved, That the admitted insecurity of the old Croton Dam to withstand unusual and unexpected freshets, such as have visited other portions of the country, renders the building of this new dam imperative, in order to provide the greatest practicable security for the uninterrupted and continuous water supply of this city in times of unexpected, though possible, freshet or rain-fall; and further, that this new dam should be so constructed as to be beyond danger of being carried away by the failure of any of the dams in the water-shed above it;

Resolved, That the estimated cost of this dam, about two millions of dollars, ought not to be considered as against the security it will afford to the city of the certainty of a continuous supply of water, in times of unexpected freshet sufficient to destroy the present old Croton Dam.

Resolved, That the city, having now incurred within the past eight years an expenditure of more than twenty millions of dollars, to secure a full supply of pure and wholesome water, in the building of its great aqueduct and reservoirs in the upper Croton water-shed, should, by the completion of this dam, be secured for the present generation in the enjoyment of the most ample supply, which the plans of the Aqueduct Commission, when completed by the building of this dam, will afford, and thus enter upon and enjoy an immediate and full return for this great expenditure.

Resolved, That a Committee of twenty members of this Board be appointed to present the foregoing resolutions to the Aqueduct Commission at their meeting, to-morrow, Thursday, January 22, 1891.

(A true copy.)

[SEAL.]

AMBROSE SNOW, President.
DARWIN R. JAMES, Secretary.

On motion of Commissioner Scott, the same were ordered filed.

Mr. John Washburne then asked for permission to present certain resolutions adopted by the Board of Fire Underwriters.

On motion of Commissioner Scott, it was ordered that said resolutions be received and read :

The resolutions are as follows :

Resolved, That the New York Board of Fire Underwriters feels the importance of finishing as speedily as practicable the work entrusted to the Aqueduct Commission, and earnestly desires that the dam at Croton river, recommended by Chief Engineer Fteley, be contracted for and built at the earliest practicable date.

Resolved, That the Committee on Water Supply be instructed to present this resolution to the Aqueduct Commission, and urge the hastening of the completion of the dam.

On motion of Commissioner Cannon, the same were ordered filed.

On the adoption of the substitute submitted by the Comptroller the vote was as follows :

Affirmative—The Mayor, the Comptroller and the Commissioner of Public Works—3.

Negative—Commissioners Duane, Tucker, Scott and Cannon—4.

The original resolution presented by Commissioner Cannon was then adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

Negative—The Mayor, the Comptroller and the Commissioner of Public Works—3.

The Commissioner of Public Works then presented the following preambles and resolution, and moved the adoption of the same :

Whereas, It has been decided by this Board that a dam be built at some point below the present Croton Dam ; and

Whereas, The dam indicated as No. 2, in Engineer Fteley's report, furnishes no additional drainage area, and an additional storage capacity of but 16,000 million gallons, and will cost $3,600,000 ; and

Whereas, The dam proposed to be erected at the point known as "Cornell's" will furnish twenty-one miles additional drainage area, and a storage capacity of 30,000 million gallons of water, and will cost, in comparison to its area and capacity, less than the dam erected at the point indicated as No. 2 ; and

Whereas, If a dam be built, it should be built at such point as to afford ample facilities for storage and water to the City of New York for the next fifty years; and

Whereas, Mr. George W. Birdsall, Chief Engineer of the Croton Aqueduct, has reported that the erection of the dam at the point known as "Cornell's" would furnish an ample supply of water for the City of New York for the next fifty years, and such report is concurred in practically by Messrs. McLean and Fteley; therefore

Resolved, That the dam to be built under the direction of the Croton Aqueduct Commissioners be built at the point designated as "Cornell's."

The same were adopted by the following vote:

Affirmative—The Mayor, the Commissioner of Public Works and Commissioners Tucker, Scott and Cannon—5.

Negative—The Comptroller and Commissioner Duane—2.

Commissioner Cannon then moved that the report of the Construction or Executive Committee, submitted on January 7, be adopted after striking out all of said report after the words "Chief Engineer" on the thirty-fourth line of page 11 of the minutes of said date, and adding thereto the words "or on a site in its near neighborhood."

The Commissioner of Public Works moved as an amendment that all reports and documents referring to the subject be spread in full on the minutes.

Which was adopted.

On motion of Commissioner Scott, the Chief Engineer was directed to prepare as soon as possible detailed plans, maps and specifications providing for the construction of the dam this day determined upon by the Aqueduct Commissioners.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, January 28, 1891, at 3 o'clock P. M.

Present—The Comptroller, and Commissioners Duane, Tucker, Scott and Cannon.

In the absence of the Secretary, Auditor J. C. Lulley acted as Secretary pro tem.

The Committee of Finance and Audit reported their examination and audit of Voucher No. 6652, being estimate for work done by contractors, amounting to $950.58; also of bills contained in Vouchers Nos. 6653 to 6669, inclusive, and 6673 and 6674, amounting to $688.75.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following:

The Construction or Executive Committee present the following communication, and recommend that the same be spread in full on the minutes and filed:

NEW YORK, January 27, 1891.

Schedule of the flow at Croton Dam into the New Aqueduct, as per request of the Chief Engineer of the Croton Aqueduct:

Since January 20, the date of my last report, the flow of water has been continued at the rate of 60,000,000 gallons per twenty-four hours.

A. FTELEY, Chief Engineer.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also presented the following:

The Construction or Executive Committee present the following report, received from the Chief Engineer, and recommend that the same be spread in full on the minutes and filed:

CHIEF ENGINEER'S OFFICE—AQUEDUCT COMMISSIONERS,
ROOM 213, STEWART BUILDING,
NEW YORK, January 27, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN--In obedience to your resolution of the 20th instant, in regard to the force employed in my Department, I respectfully submit my report.

The work in charge of the Chief Engineer is mainly as follows:

AQUEDUCT PROPER.

Preparation of the work to be done this spring, consisting of: The construction of a building near the One Hundred and Thirty-fifth Street Gate-house and the grading of the adjoining block.

A permanent gate-house at Shaft 25 and the grading of the adjoining ground.

The building of a blow-off channel, from Shaft 24 to Harlem river.

Eleven houses along the line of the Aqueduct over the shafts, with the grading, sodding and roadways necessary therefor.

A house and pumping apparatus over Shaft 12C, in Gould's Swamp.

The completion of a large house over the gate-chambers at the head of the Aqueduct, near Croton Dam.

The building of a highway at that point to replace the road interrupted.

The completion of the final estimates for Section 16, Section B and Section 9. The estimates for the last section, especially, being very much complicated by the large amount of repairs due to original defective work.

The superintendence of the service of the Aqueduct.

STORAGE SYSTEM.

The construction, in various stages of completion, of Sodom Dam, Bog Brook Dams, two dams at Carmel, Titicus Dam at Purdy's Station.

The laying out and construction of a number of highways due to the flowage of the two reservoirs last named.

The topographical work necessary in the Croton Valley, which will be much increased by the recent decision of the Aqueduct Commissioners to build Cornell's Dam, and which includes the geological investigations prosecuted with diamond drills.

The work of preparation for the construction of the Cornell Dam just decided on.

PREPARATION OF EVIDENCE AND RECORDS.

A number of assistants are now almost exclusively employed in preparing and sorting the evidence necessary for the coming litigation in regard to the claims of the Aqueduct contractors, under the direction of the counsel in charge. This work involves a large amount of labor.

CENTRAL OFFICE.

A. Fteley, Chief Engineer.

George S. Rice, Deputy Chief. He aids the Chief Engineer in the general superintendence of the work. He is especially in charge of the service of the New Aqueduct.

F. W. Frost, Special Assistant Engineer and Secretary to Chief Engineer, constantly assists the Chief Engineer in the preparation of his personal work and in charge of all final estimates.

William H. Spencer, Chief Clerk, in charge of vouchers for all estimates of work done, also of all bills for supplies and requisitions for the same, also of all pay-rolls, weekly and monthly, and of miscellaneous clerical work.

Robert A. McKim, Assistant Engineer, in charge of all the engineering records and partly assisting Chief Clerk Spencer.

George B. Bosworth, Clerk.

William B. Swan, Assistant Engineer, Louis P. DeLuze, Assistant Engineer, A. S. Nye, Jr., Computer. These three persons have been almost exclusively employed in the Central Office or in the field in checking in detail for the Chief Engineer all the final estimates prepared by the Division Engineers; they are now on that duty.

F. S. Cook is the head of the Draughting Bureau. He develops the original plans of the Chief Engineer, designs architectural and detail work and assists in preparing the contracts and specifications. The Draughtsmen under him are now mostly engaged in executing the work above mentioned for the Aqueduct, and all the final detailed drawings for the dams.

The duties of those employed on the Aqueduct proper are explained in the schedule.

It shows that twenty-two persons are employed in various capacities for the maintenance and service of the Aqueduct from Croton Dam to Central Park.

The remaining sixteen, besides attending to the engineering work, are employed in completing the final estimates and also for a large part of their time in preparing the records and the evidence necessary for the coming litigation.

The engineering force employed on the storage system, as shown by the schedule, includes:

One Division Engineer at Brewsters and under him eleven persons for Sodom Dam, nine persons for Bog Brook Dams, three persons for both dams.

One Division Engineer at Purdy's Station in charge of Titicus Dam and eight persons under him.

One Division Engineer at the Carmel Dams and six persons under him.

The number of persons employed at each dam varies with the condition of progress of each.

The topographical work is in charge of one Assistant Engineer with an engineering party of seven persons and two Topographical Draughtsmen.

They have been employed in surveying the Croton Valley, the various dam sites and the details of the flowage of the reservoirs, including the investigations for a high dam at the main branch of Croton river.

In connection with this party sixteen men are employed under the direction of Walter J. Sager on the three diamond drill outfits, which have been used for the study of the geological formation of the valley; also seven laborers are employed in excavating trenches and doing other superficial work wherever the rock is expected to be reached without the aid of the drills.

The work at the New York end of the Aqueduct and of making final estimates along the line is drawing to a close and will not require as much engineering force, but the coming construction of the high dam just ordered will require more engineering work, which will cause modifications in the detail of the employees.

The engineering force on the line of the Aqueduct is large, but with my understanding of the directions of counsel, I am unable without it to prepare the evidence for the coming litigation.

I trust that the explanations just given will be found sufficient to justify the retention of the present employees.

I must add that, as the work advances on the dams just begun, additional Superintendents of Dam Construction will be needed.

Respectfully,

A. FTELEY, Chief Engineer.

CENTRAL OFFICE.

NAMES.	OFFICIAL DESIGNATION.	SALARY.
Alphonse Fteley*	Chief Engineer	$10,000 00 per annum.
George S. Rice*	Deputy Chief Engineer	7,000 00 "
Frederick W. Frost*	Special Assistant Engineer, Private Secretary to Chief Engineer	2,400 00 "
W. H. Spencer*	Chief Clerk	2,000 00 "
Robert A. McKim*	Assistant Engineer	1,500 00 "
Lowndes A. Smith*	Stenographer and Typewriter	100 00 per month.
Charles Thomas*	Office Boy	50 00 "
William B. Swan†	Assistant Engineer	1,800 00 per annum.
Louis P. DeLuze†	"	1,800 00 "
A. S. Nye†	Leveler	75 00 per month.
George B. Bosworth†	Clerk	75 00 "
Frederick S. Cook‡	Assistant Engineer	3,500 00 per annum.
Guiseppe Bonanno‡	Draughtsman	150 00 per month.
Charles C. Manning‡	"	150 00 "
Charles G. Gustafson‡	"	150 00 "
Cæsar Leonhard‡	"	150 00 "
Robert W. Creuzbaur‡	"	150 00 "
J. Arthur Valles‡	Office Boy	50 00 "

* Chief Engineer's Office. † Work on final estimates. ‡ Draughting Bureau.

AQUEDUCT UPPER DIVISION, CROTON DAM AND TARRYTOWN OFFICES

NAMES.	OFFICIAL DESIGNATION.	SALARY.
William D. Kelley, Jr*	Assistant Engineer	$1,800 00 per annum.
William S. Page*	"	1,500 00 "
Ira Ganong*	Chainman	60 00 per month.
John Gallery*	Axeman	60 00 "
John Dynan*	Stableman	60 00 "
W. J. Walker*	Foreman	4 00 per day.
William Guilfoyle*	Laborer	2 00 "
Tony Mount*	"	2 00 "

* In charge of the running and maintenance of the Aqueduct.

NAMES.	OFFICIAL DESIGNATION.	SALARY.
Beverly R. Value†	Assistant Engineer	$1,800 00 per annum.
Frederick B. Rogers†	"	1,500 00 "
David O'Shea†	Leveler	1,200 00 "
William E. Guilfoyle†	Stenographer and Typewriter	85 00 per month.
Mattie Meadows†	Typewriter	2 50 per day.

† Engineering work; also final estimates, and establishment of records and evidence for counsel.

AQUEDUCT LOWER DIVISION, YONKERS OFFICE.

NAME.	OFFICIAL DESIGNATION.	SALARY.
Frederick W. Watkins*	Assistant Engineer	$1,800 00 per annum.
A. J. Sparrow*	Foreman	4 00 per day.
James Healey*	Driver	2 00 "
Peter B. Lint*	Laborer	2 00 "
Herbert C. Alden†	Assistant Engineer	1,800 00 per annum.
McRae Sykes†	Computer	75 00 per month.
William Horton†	Axeman	60 00 "
Joseph F. Banks†	"	60 00 "

* In charge of the running and maintenance of the Aqueduct.

† Engineering work; also final estimates, and establishment of records and evidence for counsel.

AQUEDUCT, NEW YORK BRANCH OFFICE.

NAMES.	OFFICIAL DESIGNATION.	SALARY.
Peter Nevins*	Axeman	$60 00 per month.
Arthur L. Beatty*	"	60 00 "
William J. Garvin*	"	60 00 "
Charles McKeon*	"	60 00 "
Henry O. Cole*	Foreman	4 00 per day.
James F. McDonough*	"	4 00 "

* In charge of the running and maintenance of the Aqueduct.

NAMES.	OFFICIAL DESIGNATION.	SALARY.
Edward Wegmann, Jr.†	Division Engineer	$3,000 00 per annum.
Cornelius V. V. Powers†	Assistant Engineer	1,500 00 "
Maurice A. Viele†	"	1,500 00 "
George E. Washburn†	Leveler	1,200 00 "
Benjamin L. Blauvelt†	Axeman	60 00 per month.
Richard S. Gillespie‡	Foreman	5 00 per day.
Harry James‡	Journeyman Machinist	3 00 "
William S. Giles‡	"	3 00 "
William W. Bullis‡	"	3 00 "
Frank Hart‡	"	3 50 "
James E. Kearns‡	Assistant Journeyman Machinist	2 00 "

† Engineering work; also final estimates and establishment of records and evidence for counsel.

‡ In charge of pumping station and machine shop at Shaft 25; also of machinery for the Aqueduct and Dams.

SODOM AND BOG BROOK DAMS, BREWSTER, PUTNAM COUNTY, N. Y.

NAMES.	OFFICIAL DESIGNATION.	SALARY.
George B. Burbank*	Division Engineer	$4,000 00 per annum.
Walter McCulloh†	Assistant Engineer	1,800 00 "
Frank N. Speyer†	Transitman	1,500 00 "
Edwin C. Penny†	Rodman	75 00 per month.
Duncan McR. Livingstone†	"	75 00 "
Timothy Bowen†	Axeman	60 00 "
John Kinney†	"	60 00 "
W. H. Langler†	Superintendent of Dam Construction	4 00 per day.
William N. Cook†	"	4 00 "
John O'Connor†	Laborer	2 00 "
Abner L. Crosby†	Superintendent of Dam Construction	4 00 "
William S. Humbert ‡	Assistant Engineer	1,800 00 per annum.
William T. Ross‡	Transitman	1,500 00 "
Isaac H. Baxter‡	Rodman	75 00 per month.
John J. Crane‡	Axeman	60 00 "

* Charge of the construction of Sodom and Bog Brook Dams. † Sodom Dam. ‡ Bog Brook Dam.

NAMES.	OFFICIAL DESIGNATION.	SALARY.
Francis F. Hine‡	Axeman	$60 00 per month.
John Holohan‡	Superintendent of Dam Construction	4 00 per day.
Thomas Graham‡	"	4 00 "
Timothy Capper‡	"	4 00 "
Charles Hutchings‡	Laborer	2 00 "
George C. Bowdy‡	"	2 00 "
Charles E. Richards‖	" (Testing Cement both dams)	3 00 "
Theodore Kelly‖	Axeman	60 00 per month.
Orson H. Cole‖	Laborer	2 00 per day.

‡ Bog Brook Dam. ‖ Both dams.

RESERVOIR "M," TITICUS DAM.

NAMES.	OFFICIAL DESIGNATION.	SALARY.
Charles S. Gowen*	Division Engineer	$4,000 00 per annum.
Robert Ridgway	Assistant Engineer	1,800 00 "
Edward S. Larned	"	1,500 00 "
Edward E. DeLancey	Leveler	1,200 00 "
Richard A. Reinisch	Rodman	75 00 per month.
W. A. Hoe, Jr	Computer	75 00 "
Edward Mezger	Axeman	60 00 "
William Whelan	"	60 00 "
James Gregory	Janitor	75 00 "
John H. Slingerland	Superintendent of Dam Construction	4 00 per day.

* Division Engineer also in charge of upper divisions of Aqueduct.

RESERVOIR "D" (CARMEL DAMS).

NAMES.	OFFICIAL DESIGNATION.	SALARY.
Alfred Craven*	Division Engineer	$4,000 00 per annum.
Gaylord Thompson	Assistant Engineer	1,800 00 "
William Gray	Transitman	1,500 00 "

* Division Engineer also in charge of lower divisions of Aqueduct.

NAMES.	OFFICIAL DESIGNATION.	SALARY.
Richard Baldwin, Jr.	Transitman	$1,500 00 per annum.
Henry Sunkle	Chainman	60 00 per month.
Stephen M. Lyons, Jr.	Axeman	60 00 "
A. J. Fleming	Superintendent of Dam Construction	4 00 per day.
John McCormick	Laborer	2 00 "

TOPOGRAPHICAL PARTY—CROTON WATER-SHED.

NAMES.	OFFICIAL DESIGNATION.	SALARY.
Evelyn P. Roberts	Assistant Engineer in charge	$1,800 00 per annum.
Jean P. Genthon	Topographical Draughtsman	1,800 00 "
Edward A. Byrne	Assistant Draughtsman	1,200 00 "
John P. Schermerhorn	Transitman	1,500 00 "
Marcus Washburn	Rodman	75 00 per month.
John Fagan	"	75 00 "
George Hopey	Axeman	60 00 "
Edward M. Avery	Laborer	2 00 per day.
John Lounsberry	"	2 00 "
Cornelius Plass	"	2 00 "

THREE DIAMOND DRILL PARTIES.

NAMES.	OFFICIAL DESIGNATION.	SALARY.
Walter J. Sager	Engineman in charge	$125 00 per month.
George A. Hammond	Foreman	100 00 "
Michael Tierney	Assistant Foreman	90 00 "
James S. Lockwood	First Helper	65 00 "
Theophilus Greaser	"	65 00 "
Patrick Lynch	Second Helper	65 00 "
George Wilson	Fireman	65 00 "
Baldwin Jones	"	65 00 "

NAMES.	OFFICIAL DESIGNATION.	SALARY.
Michael Fletcher	Fireman	$65 00 per month.
John Regan	Laborer	2 00 per day.
Elias W. Purdy	"	2 00 "
C. H. Manchester	"	2 00 "
Edward Sarles	"	2 00 "
Henry Bailey	"	2 00 "
Homer Adams	"	2 00 "
R. F. Vredenburg	"	2 00 "
William Bath	"	2 00 "
Angelow Fleming*	"	2 00 "
Clarence McCord*	"	2 00 "
John Carpenter*	"	2 00 "
Charles Bailey*	"	2 00 "
John Tompkins*	"	2 00 "
M. Curtin*	"	2 00 "
Gilbert Tompkins*	"	2 00 "

* Laborers employed in trenching for exploration.

Commissioner Cannon moved that the report be printed, and referred to Commissioner Tucker and the Comptroller to ascertain whether or not any reduction can be made in the Engineer Corps, and whether or not any changes can be made without detriment to the service, and make such recommendations as may be deemed proper.

Commissioner Scott moved as an amendment that President Duane be added to said Committee.

The motion as amended was carried.

The Committee also reported that on the 26th instant an explosion occurred at the Auxiliary Dam at Carmel, resulting in the death of the contractor's foreman.

On motion of Commissioner Scott, the report was ordered filed.

The Committee also presented the following :

The Construction or Executive Committee present the following communication, received from the Chief Engineer, and recommend that the same, together with the maps, descriptions, etc., be referred to the Commissioners of the Sinking Fund :

NEW YORK, January 27, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—I herewith submit twenty-three (23) plans showing the land at the shaft-sites on the line of the New Aqueduct, from Shaft No. 1 to Shaft No. 23, and indicating the areas to be retained, the areas to be disposed of, and also the areas to be obtained for roadways.

Permit me, however, to call your attention to the prospective value of the land indicated to be sold in connection with Shafts 22 and 23 on Sedgwick avenue; especially of the land adjoining Shaft 23.

I am, very respectfully,

A. FTELEY, Chief Engineer.

List of Lands Which may be Sold.

At Shaft No. 1	4.797 acres.
" 2	6.961 "
" 3	3.893 "
" 4	5.359 "
" 5	7.293 "
" 6	5.202 "
" 7 (all to be sold)	5.968 "
" 8	9.060 "
" 9	4.646 "
" 10	5.850 "
" 11	.....
" 12	10.892 acres.
" 13	2.090 "
" 14	.....
" 15	7.259 acres.
" 15½	2.824 "
" 16	5.591 "
" 17	5.767 "
" 18	.....
" 19	2.163 acres.
" 19⅝	..... (Van Cortlandt Park).
" 19½	..... "
" 20	..... "
" 21	.... (Reservoir site).
" 22	2.611 acres.
" 23	2.336 "
" 24	....
To be sold, total	100.562 acres.

Land to be Obtained for Roadways to Shafts.

At Shaft No. 2	4.422 acres.
" 4	0.396 "
" 6	0.181 "
" 16	0.586 "
Total	5.585 acres.

—and recommend the adoption of the following resolution:

Resolved, That the twenty-three plans showing land at the shaft-sites on the line of the New Aqueduct, from Shafts Nos. 1 to 23, indicating the areas to be retained and the areas to be disposed of, referred to in the communication of the Chief Engineer, dated January 27, 1891, together with a copy of said communication and the schedules thereto attached, be transmitted by the President to the Comptroller for submission to the Commissioners of the Sinking Fund for such action as they may deem proper.

On motion of Commissioner Scott, the report was adopted.

The Committee also recommend the adoption of the following resolution :

Resolved, That the same authority heretofore granted to and now enjoyed by the Park Department of the right to take surplus material from the New Aqueduct in the Twenty-third and Twenty-fourth Wards of this city be and the same is also hereby granted to the Commissioner of Street Improvements of said wards.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That the action of the Chief Engineer in temporarily employing Michael Costello as a Laborer, at two dollars per day, to perform the duties of Watchman while the portable hoisting-plant, recently received from the West Point Manufacturing Company, is being tried and tested, be and the same is hereby approved and adopted.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That the action of the Chief Engineer in continuing the use of the buildings leased from Charles Schwarz, on Tenth avenue, north of One Hundred and Seventy-fourth street, for two months from November 1, 1890, be and the same is hereby approved.

On motion of Commissioner Scott, the same was adopted.

The Committee also presented the following :

The Construction or Executive Committee present the following :

"Whereas, The Aqueduct Commission have passed a resolution to allow and pay the Town of Mount Pleasant the sum of one thousand eight hundred dollars to rebuild the old bridge at Cut 8, and the adjoining highways on city property, and maintain them forever, and have requested the Board of Estimate and Apportionment to concur in such action ; therefore

"Resolved, That the Board of Estimate and Apportionment does hereby concur in the resolution of the Aqueduct Commissioners to pay to the Town of Mount Pleasant the sum of one thousand eight hundred dollars to rebuild the old bridge at Cut 8, and the adjoining highways, and maintain them forever.

"A true copy of preamble and resolution adopted by the Board of Estimate and Apportion ment, January 23, 1891.

"CHAS. V. ADEE, Clerk."

—and recommend the adoption of the following resolution :

Resolved, That, upon the execution of the agreement referred to in the report of the Construction Committee submitted on December 17, 1890, by the authorities of the Town of Mount Pleasant, Westchester County, New York, a warrant is hereby ordered drawn for the sum of one thousand eight hundred dollars, the amount referred to in said agreement, which amount is to be in full for the expense of repairing the highways and rebuilding and forever maintaining them in the manner referred to in said agreement.

On motion of Commissioner Scott, the report was adopted.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Chief Engineer of this Commission has certified in writing, under date of January 27, 1891, that Clinton Stephens has completely performed and carried out the provisions of the contract made by him with this Commission on the 4th day of September, 1889, for constructing highways or roads and their appurtenances, fences, etc., at East Branch and Bog Brook Reservoirs, in the Town of South East, Putnam County, New York, and has stated from actual measurements the whole amount of work done and materials furnished under and according to the terms of said contract, and of the true value thereof; now, therefore, be it

Resolved, That the Aqueduct Commissioners do accept the work done and materials furnished by Clinton Stephens, under the contract made by him with this Commission on the 4th day of September, 1889, for doing the work above referred to, and that a proper voucher for the final payment for work done and materials furnished under said agreement be approved by the Aqueduct Commissioners and certified to the Comptroller for payment; and the Comptroller is hereby requested to pay the amount of said final estimate without any deduction for overtime.

On motion of the Comptroller, the same was laid on the table.

The Comptroller presented a stenographic report of complaint of a Committee of Aqueduct Inspectors made before him, supplementing a written communication, in the matter of the examination by the Civil Service Board for promotion from the grade of Inspector to that of Superintendent.

On motion of Commissioner Scott, the same was referred to the Construction or Executive Committee.

A communication was received from Edward R. Scott, dated January 15, 1891, applying for salary as an Inspector of Masonry on the New Aqueduct from September 23, 1890, to January 15, 1891, during which time he was under suspension upon charges preferred against him which were dismissed on January 14, 1891.

On motion of Commissioner Scott, the communication, together with a statement of all the facts in the case, were ordered transmitted to the Counsel to the Corporation for his opinion thereon.

The Commissioners then adjourned.

J. C. LULLEY, Secretary pro tem.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, February 4, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

The Committee of Finance and Audit reported their examination and audit of bills contained in Vouchers Nos. 6678 to 6696, inclusive, amounting to $3,706.58.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following communication, received from the Deputy Chief Engineer, and recommended that the same be spread in full on the minutes and filed :

NEW YORK, February 3, 1891.

Schedule of the flow at Croton Dam into the New Aqueduct, as per request of the Chief Engineer of the Croton Aqueduct.

Since January 27, the date of the last report, the flow of water has been continued at the rate of 60,000,000 gallons per 24 hours.

GEORGE S. RICE, Deputy Chief Engineer.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also recommended the adoption of the following resolution :

Resolved, That the Counsel to the Corporation be and hereby is requested to include in the application for the condemnation of the several parcels of land shown on property map "F F VI" an application to the Supreme Court for the approval of the substituted system of highways adopted and laid out by this Commission at the Town of South East, Putnam County, New York, and that the Chief Engineer prepare for approval by the Commission, and filing, a map or plan showing such substituted system.

On motion of Commissioner Scott, the same was adopted.

The following preamble and resolution, laid on the table at the last meeting, were taken from the table and read:

Whereas, the Chief Engineer of this Commission has certified in writing, under date of January 27, 1891, that Clinton Stephens has completely performed and carried out the provisions of the contract made by him with this Commission on the fourth day of September, 1889, for constructing highways or roads and their appurtenances, fences, etc., at East Branch and Bog Brook Reservoirs, in the Town of South East, Putnam County, New York, and has stated from actual measurements the whole amount of work done and material furnished under and according to the terms of said contract, and of the true value thereof; now, therefore, be it

Resolved, That the Aqueduct Commissioners do accept the work done and materials furnished by Clinton Stephens, under the contract made by him with this Commission on the fourth day of September, 1889, for doing the work above referred to, and that a proper voucher for the final payment for work done and materials furnished under said agreement be approved by the Aqueduct Commissioners, and certified to the Comptroller for payment; and the Comptroller is hereby requested to pay the amount of said final estimate without any deduction for overtime.

The same were then adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Special Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, February 18, 1891, at 11 o'clock A. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

In the absence of the Secretary, Auditor J. C. Lulley acted as Secretary pro tem.

On motion of Commissioner Scott, the minutes of meetings of January 14, 21, 22, 28 and February 4, 1891, were ordered approved.

The Committee of Finance and Audit reported their examination and audit of Vouchers Nos. 6699 to 6705, inclusive, being estimates for work done by contractors, amounting to $32,513.20; also of bills contained in Vouchers Nos. 6706 to 6731, inclusive, amounting to $1,120.64.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following:

The Construction or Executive Committee present the following communication received from the Chief Engineer, and recommend that the same be spread in full on the minutes and filed:

NEW YORK, February 17, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—Schedule of the flow at Croton Dam into the New Aqueduct, as per request of the Chief Engineer of the Croton Aqueduct.

Since February 3, the date of the last report, the flow of water was continued at the rate of sixty million gallons per twenty-four hours, until Friday, the 13th instant, when the flow was increased to seventy million gallons, in accordance with the request of Chief Engineer Birdsall.

I am, very respectfully,

A. FTELEY, Chief Engineer.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also presented the following :

The Construction or Executive Committee present the following communication received from the Chief Engineer :

NEW YORK, February 17, 1891.

To the Honorable the Committee on Construction.

GENTLEMEN—I must bring your attention to a slight clerical error in the amount of the bills presented by Messrs. Smith & Brown, which I reported to your Committee on December 9, 1890.

The total amount of the bills presented should be $9,236.03, instead of $9,236.60, a difference of $3.33, and the amount returned for payment by myself should be $4,616.03, instead of $4,614.55, as previously reported, a difference of $1.48.

I transmit herewith one copy of the bills referred to, and a schedule showing the total amount of each bill, and the amount recommended for payment by the Chief Engineer.

The resolution of your Committee and the Aqueduct Commissioners, dated December 10, 1890, provides for the payment to Messrs. Smith & Brown of the sum of $4,614.55.

This is to ask you to make the necessary correction. The amount should be $4,616.03.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommend that the action taken on the adoption of the preamble and resolution presented on December 10, 1890, concerning the payment of the claim of Smith & Brown for extra work done by them in connection with the construction of Section 1 of the New Aqueduct, be and hereby is rescinded, and in lieu thereof report in favor of the adoption of the following preamble and resolution :

Whereas, Smith & Brown, contractors for Section 1 of the New Aqueduct, have presented bills to the Aqueduct Commissioners for certain work done by them in connection with the construction of said section and in the vicinity thereof, amounting in all to the sum of $9,236.50, and it appearing from the foregoing communication of the Chief Engineer that said Smith & Brown should be allowed for the extra work done by them the sum of $4,616.03, and the Counsel to the Corporation having advised that a voucher be prepared for the amount conceded to be due by the Commissioners for the extra work so done ; therefore,

Resolved, That the sum of $4,616.03 is hereby allowed to Smith & Brown, contractors for the construction of Section 1 of the New Aqueduct, for extra work done in connection with the construction of said section, including cash advanced for freight and other expenditures, and for such other extra work as was done in the vicinity of Section 1, but not connected with the construction of said section.

On motion of Commissioner Tucker, the report was adopted.

The Committee also presented the following :

The Construction or Executive Committee report :

That they have examined the claim made by James L. Vallely to be allowed pay for one day in the month of September and ten days in the month of December, 1889, during which time he

was in the employ of the Aqueduct Commissioners as an Inspector of Masonry, and being of opinion that said claim is not a just and proper one, recommend the adoption of the following resolution:

Resolved, That the claim of James L. Vallely to be allowed pay for one day in the month of September and ten days in the month of December, 1889, be and the same is hereby denied.

On motion of Commissioner Scott, the report was adopted.

The Committee also recommend the adoption of the following resolution:

Resolved, That the action of the Chief Engineer in employing Augustus Travis as Laborer, at $2 per day, on the 2d instant, for work at the South Yonkers Gate-house, be and the same is hereby approved.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following resolution:

Resolved, That, upon the recommendation of the Chief Engineer, the services of Miss Mattie Meadows, temporarily employed as Typewriter in the office of Division Engineer Gowen, at Tarrytown, N. Y., are hereby continued in that capacity.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following preambles and resolution:

Whereas, Sullivan, Rider & Dougherty, contractors for the construction of a dam and other work on the East Branch of the Croton river, in Putnam County, New York, have requested the Aqueduct Commissioners to release and pay to them the sum of eight thousand dollars from the ten per cent. retained for work done under the contract for the construction of said dam in advance of the final certificate for doing said work in order to assist them in completing said work; and

Whereas, The Chief Engineer has reported that it is important for the welfare of the water-supply of the City that certain portions of the dam be completed on the east branch of the Croton river as soon as possible, in order to allow the filling of the reservoirs during the first months of 1891; and the Chief Engineer having also reported that the amount retained for work already done amounts to the sum of thirty-five thousand eight hundred and ninety-one dollars and forty-seven cents, and having recommended that such financial aid be given said contractors as was lawful and proper, and the Counsel to the Corporation having heretofore advised that such steps might be taken by the Commissioners, we recommend the adoption of the following resolution:

Resolved, That the Aqueduct Commissioners hereby request and advise the Comptroller to release and pay to Sullivan, Rider & Dougherty, the contractors for the construction of a dam and other work on the east branch of the Croton river, in Putnam County, New York, out of the ten per cent. retained for work done under said contract, the sum of five thousand dollars, providing that said amount shall be applied to the payment of certain bills mentioned in their communication to the Aqueduct Commissioners, under date of February 10, 1891, and also providing that said contractors shall consent that said payment shall be considered as having been done and performed

under said contract, and upon also receiving the consent of the sureties of said contractors to said payment.

The same were adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee of Finance and Audit reported their examination and audit of Voucher No. 6732, being bill for extra work done by Smith & Brown, contractors for the construction of Section 1 of the New Aqueduct, in connection with the construction of said section, etc., amounting to $4,616.03.

On motion of Commissioner Scott, the same was approved and ordered certified to the Comptroller for payment.

The Commissioners then adjourned.

J. C. LULLEY, Secretary pro tem.

AQUEDUCT COMMISSION.

Minutes of Special Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Tuesday, March 10, 1891, at 3.15 o'clock P. M.

Present—The Comptroller, and Commissioners Duane, Scott and Cannon.

The Construction or Executive Committee recommended the adoption of the following preamble and resolution :

Whereas, In the opinion of the Aqueduct Commissioners the further sum of five hundred thousand dollars will be required to defray the necessary and lawful current expenditures of said Commissioners ; now therefore be it

Resolved, That the Comptroller of the City of New York be and he is hereby requested to raise the sum of five hundred thousand dollars upon bonds of the City of New York, in conformity with the requirements of section 32, chapter 490, Laws of 1883, of the State of New York, for the uses and purposes of the Aqueduct Commissioners, as set forth in said chapter and section of said law.

The same were adopted by the following vote :

Affirmative—The Comptroller, and Commissioners Duane, Scott and Cannon—4.

The Committee also presented the following communication, received from the Chief Engineer, and recommended that the same be spread in full on the minutes and filed :

NEW YORK, March 2, 1891.

Schedule of the flow at Croton Dam into the New Aqueduct, as per request of the Chief Engineer of the Croton Aqueduct.

Since February 17, the date of the last report, the flow of water was continued at the rate of seventy million gallons per twenty-four hours.

A. FTELEY, Chief Engineer.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, an appropriation of $200 is hereby made for the purpose of lithographing and printing the plans for the permanent structure over Shaft 25 of the New Aqueduct.

The same was adopted by the following vote :

Affirmative—The Comptroller, and Commissioners Duane, Scott, and Cannon—4.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, an appropriation of $30 is hereby made to cover the cost of exchanging a No. 2 Remington type-writing machine, for use in his office.

The same was adopted by the following vote :

Affirmative—The Comptroller, and Commissioners Duane, Scott and Cannon—4.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, an appropriation of $200 is hereby made for the purpose of erecting at the manhole prepared for that purpose at South Yonkers an apparatus for the gauging of the flow of the New Aqueduct at that point.

The same was adopted by the following vote :

Affirmative—The Comptroller, and Commissioners Duane, Scott and Cannon—4.

The Committee also presented the following communication, received from the Chief Engineer :

NEW YORK, March 3, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—On January 15, 1889, you authorized me to prepare models of the horse-shoe form of the Aqueduct at an expense not to exceed $325. I find now that the counsel require something more, and more elaborate models than was originally intended.

This is to ask you to extend my authority in the premises under the instructions of counsel, and to increase the appropriation to a sum not exceeding $1,000, although I expect that the expenditure will not reach that sum.

I am, respectfully,
A. FTELEY, Chief Engineer.

—and recommend the adoption of the following resolution :

Resolved, That the authority asked for by the Chief Engineer, as set forth in the foregoing communication, be and hereby is granted, and the appropriation made on January 15, 1889, is hereby increased to the sum of $1,000, to cover the work in question.

On motion of Commissioner Scott, the same was laid on the table.

The Committee also presented the following report, received from the Secretary, showing in detail the expenditures of the Aqueduct Commission from its inception up to and including December 31, 1890, and recommended that the same be spread in full on the minutes and filed:

Abstract of Trial Balance for December, 1890.

Commissioners' Office.		
Salaries of Commissioners	$184,602 07	
Salaries—Secretary and employees	96,628 51	
Stationery	2,969 39	
Furniture and fixtures	3 165 71	
Rent	28,161 60	
Incidental expenses	5,216 52	
Books, maps and drawings	337 10	
Traveling expenses	1,302 71	
Advertising	18,103 19	
Stenographic reports	3,932 31	$344,419 11
Chief Engineer's Office.		
Salaries of Engineers	$397,825 45	
Stationery	5,383 57	
Furniture and fixtures	4,165 04	
Rent	32,092 15	
Incidental expenses	6,485 03	
Books, maps and drawings	17,200 94	
Consulting Engineer's fees	100 00	
Drawing instruments, tables and materials	3,783 61	
Testing machines and tests	8,176 81	475,217 60
Tarrytown Office.		
Salaries of Engineers	$57,692 24	
Stationery	1,180 41	
Furniture and fixtures	750 25	
Rent	6,600 00	
Incidental expenses	4,013 06	
Books, maps and drawings	92 81	
Drawing instruments, tables and materials	1,127 78	
Laborers on the line	2,703 17	
Drivers and Laborers	19,989 03	
Field instruments and implements	8,744 60	
Traveling expenses	3,768 20	
Harness and stable fittings	2,043 10	

Maintenance—Horses and wagons	$10,491 57	
Horses	3,575 00	
Wagons	1,718 00	
Hire of horses and wagons	1,805 90	
		$125,631 47

Denison Engineer.

Salaries—Engineers and Laborers, old account	$[illegible] 84	
" " new account	[illegible] 33	
Stationery	[illegible] 84	
Furniture and fixtures	4,471 [illegible]	
Rent	[illegible] 62	
Incidental expenses	[illegible] 40	
Books, maps and drawings	[illegible] 00	
Drawing instruments, tables and materials	[illegible] 00	
Field instruments and implements	[illegible] 65	
Traveling expenses	[illegible] 82	
Harness and stable fittings	[illegible] 00	
Maintenance—Horses and wagons	[illegible] 40	
Horses	[illegible] 00	
Wagons	[illegible] 00	
Heating headquarters	[illegible] 47	
Hire of horses and wagons	[illegible] 00	
Testing machines and tests	[illegible] 40	
Laborers on the line	[illegible] 75	
Auxiliary offices	[illegible] 47	
		[illegible] 47

Grand Lake Survey.

Salaries—Engineers and Laborers	$[illegible] 14	
Incidental expenses	[illegible] 82	
Field instruments and implements	[illegible] 67	
Traveling expenses	[illegible] 32	
Hire of horses and wagons	[illegible] 35	
Maintenance—Horses and wagons	[illegible] 70	
Rent	[illegible] 00	
Harness and stable fittings	[illegible] 45	
Drawing instruments, tables and materials	[illegible] 00	
		40,826 31

New Reservoir Survey.

Salaries—Engineers and Laborers	$3,[illegible] 00	
Drawing instruments, tables and materials	[illegible] 00	
Field instruments and implements	4,[illegible] 31	

Furniture and fixtures	$6 38	
Traveling expenses	8 54	
Incidental expenses	52 06	
Stationery	3 91	
		$10,118 88
Sodom Dam Survey.		
Salaries—Engineers and Laborers	$7,072 68	
Maintenance—Horses and wagons	2 00	
Field instruments and implements	86 49	
Hire of horses and wagons	50 75	
Incidental expenses	44 98	
Stationery	1 50	
Traveling expenses	47 10	
		7,305 50
Surveying Dam Sites.		
Salaries—Engineers and Laborers	$17,920 70	
Maintenance—Horses and wagons	448 39	
Field instruments and implements	85 45	
Hire of horses and wagons	96 00	
Incidental expenses	292 48	
Stationery	20 85	
Traveling expenses	484 14	
Rent	445 38	
Drawing instruments, tables and materials	7 80	
Furniture and fixtures	37 50	
Heating headquarters	6 93	
Books, maps and drawings	8 00	
		19,853 62
Principal Assistant Engineer, New York Office.		
Heating headquarters	$9 25	
Stationery	59 06	
Furniture and fixtures	36 24	
Incidental expenses	53 36	
		157 91
Aqueduct Commissioners' Report, 1883 to 1887	$8,894 06	
Engraving and printing	19,072 61	
Reports of Engineers and Aqueduct Commissioners on Quaker Bridge Dam	1,472 96	
Reports of Engineers on High Masonry Dam	490 75	
Construction damages	200 00	
Claims for damages	609 50	
Taxes on lands	5,666 23	

Land agents	$1,128 65	
Diamond rock boring drills	118,312 52	
Diamond rock borings	7,077 42	
Monumenting the line	3,704 98	
Monumenting Sodom Dam survey	1,546 72	
Monumenting Aqueduct tunnel—Division Engineer	143 72	
Models	683 48	
Observatory towers	1,805 95	
Judgments	507 54	$171,317 09
Land and land damages	$53,988 33	
Examination of ventilation and lighting	1,306 36	
Examining Engineers	11,041 82	
Board of Experts, etc., Quaker Bridge Dam	12,550 00	
Experts examining construction work	11,926 16	
Experts on water-gates and other machinery	210 00	
Inspection of cast-iron pipes, etc	8,254 01	99,276 74
		$2,759,364 70

Contracts.

SECTION.	ESTIMATE.		
1	Final.	Smith & Brown	$649,964 62
2	"	Brown, Howard & Co	2,490,829 35
3	"	"	1,836,215 99
4	"	"	1,805,244 83
5	"	"	810,066 15
6	"	O'Brien & Clark	748,852 97
7	"	"	1,777,610 99
8	"	"	1,454,157 36
9	70½	"	1,897,542 79
B	70	Heman Clark	1,444,481 82
A	39	"	1,105,036 32
12	Final.	Chas. Peterson, assignee of O'Brien & Clark	541,923 04
13	"	John Brunton & Co	427,641 42
14	"	"	647,869 75
15	"	Richard A. Malone	156,358 20
15½	"	Robert Hanna & Co	2[illegible],045 98
16	30	O'Brien & Clark	953,300 23

SECTION.	ESTIMATE.			
17	Final.	Richard J. Malone	$37,621 69	
East Branch Reservoir Dam	34	Sullivan, Rider & Dougherty	319,213 85	
Dams 1 and 2	21	David R. Paige & Co	175,751 86	
Deepening and finishing Shaft No. 24	Final.	O'Brien & Clark	91,904 59	
Iron lined masonry Aqueduct near Shaft 30	"	Breuchaud, Pennell & Co	69,369 20	
Stop-cock valves	"	Coldwell, Wilcox & Co	19,649 53	
Gate-house, etc., at South Yonkers	"	O'Brien & Clark	20,349 79	
Gate-house, etc, at Pocantico	"	John Peirce	21,717 92	
Shaft 13A	"	O'Brien & Clark	22,963 40	
Shaft 13½	"	"	18,093 69	
Shaft 15½	"	John A. Lee	15,412 90	
One Hundred and Thirty-fifth Street Gate-house doors, windows, etc	"	Charles W. Palmer	6,935 00	
Cast-iron work, etc., New Croton Gate-house	"	Coldwell, Wilcox & Co	16,057 02	
Highways, etc., East Branch, etc	13	Clinton Stephens	78,996 67	
Gate-house, etc., walls for Blow-off Chambers, at Ardsley	Final	O'Brien & Clark	4,500 00	
Cutting timber, etc., East Branch Reservoir	"	Pennell & O'Hern	8,975 00	
2' x 5' sluice gates	"	John Fox	14,190 00	
3' x 4' sluice gates	"	"	6,750 00	
3' x 6' sluice gates	"	"	21,900 00	
Earth and masonry dam, Reservoir M	9	Washburn, Shaler & Washburn	67,688 21	
Gate-house, etc., for new gate chambers, Croton Dam	6	Smith, Brown & Coleman	12,756 60	
Combined stationery hoisting engines, etc	Final	Charles Peterson	11,250 00	
2 pairs horizontal tubular boilers	"	West Point Manufacturing Co., Limited	11,900 00	
Earth and masonry dam, Reservoir D	1	Michael S. Coleman	528 84	
Auxiliary earth and masonry dam, Reservoir D	1	"	367 20	
11 head-houses, etc., for the shafts	1	Breuchaud, Pennell & Co	756 81	
				$19,849,181 58

Agreements.

	Estimate.			
Shaft 11C	Final	Brown, Howard & Co	$5,000 00	
Shaft 12C	"	O'Brien & Clark	5,000 00	
Shaft 16½	"	"	5,000 00	
Shaft 18½	"	"	5,000 00	
Shaft 19½	"	Heman Clark	5,000 00	
Culvert, Shaft 19	"	O'Brien & Clark	4,893 74	
" 20	"	Heman Clark	2,932 05	
" 23	"	O'Brien & Clark	3,208 86	
Crib dock	"	Charles Peterson	3,694 60	
Iron work for Saw Mill river blow-off	"	Coldwell, Wilcox & Co	1,962 57	
Pocantico blow-off	"	"	144 11	
Tibbett's brook blow-off	"	"	144 11	
Lining Shafts 22 to 24, Section A	"	"	4,450 75	
" Shaft 20, Section B	"	"	2,663 28	
" Shaft 28, Section 13	"	"	2,315 02	
" Shaft 29, Section 14	"	"	2,338 57	
Cast and wrought iron ladders, Sections 1 to 9 and B and A	"	"	2,824 25	
Roof, iron floor plates, etc	"	"	3,326 70	
Cast-iron special pipe	"	"	4,931 19	
Filling the low ground at Shaft Site No. 12	"	O'Brien & Clark	4,910 00	
Cave-in, Shaft 13	"	"	5,000 00	
Laying 20-inch pipe, Shaft 21	"	"	2,895 83	
Grouting Shaft 17½	"	"	4,427 50	
" Stations 778 and 779	"	"	1,075 00	
Highways, trestle-work and bridges	"	Smith & Brown	4,500 00	
Grouting Section 13	"	Rodgers, Shanly & Co	5,000 00	
" Shaft 30	"	Breuchaud, Pen ell & Co	2,900 93	
Sodding South Yonkers embankment	"	Rider & Dougherty	1,575 57	
Taking down and enlarging top of Shaft 11C	"	C. L. Kalmbach	2,917 32	
Walls and foundations near blow-off chamber, Shaft 24	"	Charles Peterson	2,233 12	
Frame head-house, etc., at Shaft 25	"	"	3,690 00	
Frame boiler-house and coal bin, Shaft 25	"	"	3,635 00	
Shaft 17½	"	Thomas O'Hern	2,222 12	
9-inch anti-friction pump, etc., Croton Dam Gate-house	"	Joseph Edwards & Co	2,1 5 00	
6 2' x 5' sluice-gates	1	John Fox	2,520 00	
				$116,487 19

Baling, pumping, etc., Section A	$1,309 50	
Pumping water in iron pipes, Section 12	5,698 65	
" " 13	5,405 00	
" " 14	7,935 00	
Iron pipe laid in tunnel, Section A	4,615 76	
" " B	980 50	
48-inch pipe at Shaft 11B	327 50	
48-inch stop-cock valves	4,500 00	
Iron work, etc., at shafts	15,172 99	
Iron work, etc., for gate-houses and blow-offs	12,532 50	
Timber work, etc., at shafts and gate-houses	18,718 59	
Exploration under the Harlem river	4,384 26	
Experimental section in concrete, Shaft 18	185 25	
Extra work, Section 6	42 70	
" " 12	65 07	
" " 14	597 49	
" " 15	89 32	
" " 16	510 00	
Extra work, enlarging Shaft 11C	147 81	
Additional work, Section 9	49 37	
" " A	1,521 88	
" " 12	21 25	
" earth and masonry dam, Reservoir M	1,139 97	
" highways or roads at East Branch, etc	2,570 97	
Extra work on the Pocantico Gate-house	121 08	
Removing solid rock, etc	701 03	
Additional work, East Branch Reservoir Dam	1,226 88	
Grading, etc., trenches, Quaker Bridge Dam Site	150 00	
Surveys and topographical map	7,000 00	
Soundings south of One Hundred and Thirty-fifth street	931 18	
Sinking test pits, Titicus river and Reservoir D	540 35	
Hoisting engines for shafts	1,000 00	
Coating interior Aqueduct with cement	8,364 37	
Telephone line	4,759 46	
Preparing and pumping, etc., inverted syphon	1,896 51	
Preparing the Aqueduct for permanent use	211 66	
		$115,483 85
		$22,840,517 32

Commissioners of Appraisal.		
Awards, Twenty-fourth Ward	$134,598 81	
" Mahattan Island Section	796,572 35	
" Westchester County Section	183,360 91	
" Putnam County Section	410,063 15	
		$1,524,595 22
City and County of New York	$96,622 02	
Westchester County	147,346 53	
Manhattan Island Section	68,449 98	
Putnam County Section	89,946 18	
		402,364 71
Total expenditures		$24,767,477 25

Statement of Receipts and Expenditures of the Aqueduct Commissioners to January 1, 1891.

RECEIPTS.			
From Bonds Issued—			
Amount of bonds	$23,695,000 00		
Premiums on same	607,168 70		
		$24,302,168 70	
Proceeds of miscellaneous sales, etc		6,146 25	
Total receipts			$24,308,314 95
EXPENDITURES.			
Vouchers, Pay-rolls, etc	$2,705,376 31		
Contracts, agreements, etc	20,081,152 62		
Land and land damages	53,988 39		
		$22,840,517 32	
Commissioners of Appraisal		1,926,959 93	
Total expenditures			24,767,477 25
Balance, Comptroller's account vs. the Aqueduct Commissioners			$459,162 30

On motion of Commissioner Cannon, the recommendation was approved.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, March 11, 1891, at 3 o'clock P. M.

Present—The Comptroller and Commissioners Duane, Scott and Cannon.

On motion of Commissioner Scott, the minutes of stated meeting of February 18, 1891, were ordered approved.

The Committee of Finance and Audit reported their examination and audit of Vouchers Nos. 6745 to 6748, inclusive, amounting to $9,589.08; also of bills contained in Vouchers Nos. 6749 to 6779, inclusive, amounting to $6,302.98; also of voucher No. 6780, being estimate for work done by contractors, amounting to $3,534.25.

On motion of Commissioner Scott, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following opinions, received from the Counsel to the Corporation, and recommended that the same be spread in full on the minutes and filed:

LAW DEPARTMENT,
OFFICE OF THE COUNSEL TO THE CORPORATION,
NEW YORK, February 20, 1891.

JOHN C. SHEEHAN, Esq., *Secretary, Aqueduct Commission:*

SIR—I have received your letter, dated February 16, last, in which you call my attention to the fact that Smith & Brown, contractors for Section 1 of the New Aqueduct, claim that they are entitled to receive interest on certain items of extra work aggregating $4,614.55, allowed and conceded to be due to them by the Commissioners out of a larger bill, amounting to $9,236.60, which was the subject of correspondence between the Commissioners and this Department in November last. (See your letter to this Department of November 20, 1890, and my reply of November 29.)

You enclose a copy of a letter addressed to the Commissioners by the contractors, under date December 19, 1890, in which they state their claim.

I am of the opinion that the contractors are only entitled by law to interest on their claim from the time of demand made upon the Comptroller for its payment.

Respectfully, yours,

WM. H. CLARK, Counsel to the Corporation.

LAW DEPARTMENT,
OFFICE OF THE COUNSEL TO THE CORPORATION,
NEW YORK, February 20, 1891.

JOHN C. SHEEHAN, Esq., *Secretary, Aqueduct Commission:*

SIR—I have received your letter of February 11, 1891, enclosing the following resolution, adopted January 20, 1891, by the Committee on Construction of the Aqueduct Commissioners:

"The Secretary presented a communication received from William H. Hall, Division Engineer of the Norfolk and Western Railroad Company, asking if the Commissioners had instruments for cross-sectioning the tunnel, and usually called the 'Sun Flower.'

"On motion of Commissioner Scott, the Secretary was directed to communicate with the Counsel to the Corporation, and inform him that certain engineering instruments and other property in the possession of the Aqueduct Commissioners, for which they have no further use, could be sold to better advantage at private sale than at public auction, and ask for his advice thereon."

In view of the broad provisions of section 62 of the Consolidation Act in this respect, I know of no way in which these instruments can be sold except at public auction.

I am, sir,

Respectfully, yours,

WM. H. CLARK, Counsel to the Corporation.

LAW DEPARTMENT,
OFFICE OF THE COUNSEL TO THE CORPORATION,
NEW YORK, March 11, 1891.

JOHN C. SHEEHAN, Esq., *Secretary, Board of Aqueduct Commissioners:*

DEAR SIR—I am in receipt of your favor of the 3d instant, informing me of the request of the Board of Aqueduct Commissioners for an opinion as to whether James Walstead and James Brown are entitled to pay from January 15, 1891, to the February 1st following, as Inspectors of Masonry, pursuant to their demand.

It appears that on January 7 last, while claimants were in the employ of the Aqueduct Commissioners as Inspectors of Masonry, said Commissioners duly adopted a resolution abolishing the office of Inspector of Masonry, the same to take effect January 15 last. That being the case, the claimants' right to further pay ceased on that day. They cannot recover.

Very respectfully,

WM. H. CLARK, Counsel to the Corporation.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also presented the following communication, received from the Chief Engineer, and recommended that the same be spread in full on the minutes and filed:

NEW YORK, March 10, 1891.

Schedule of the flow at Croton Dam into the New Aqueduct, as per request of the Chief Engineer of the Croton Aqueduct.

Since March 2, the date of my last report, the flow of water has continued at the rate of 70,000,000 gallons per 24 hours.

A. FTELEY, Chief Engineer.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also recommended the adoption of the following resolution:

Resolved, That the claim of Leroy Whitney to be allowed pay as an Inspector of Masonry for five days in the month of June, 1889, which days were deducted from his vacation, be and the same is hereby denied.

On motion of Commissioner Scott, the same was adopted.

The Committee also presented the following:

The Construction or Executive Committee present the following report, received from the Chief Engineer, giving the plan and location of the proposed Jerome Park Reservoir, and recommend that the same be spread on the minutes, and that a copy of the same be transmitted to the Mayor, Comptroller and Commissioner of Public Works, and that their attention be called to the subject-matter of the purchase of Jerome Park lands for Aqueduct purposes; which matter was referred to them on August 7, 1889, to report whether, in view of the present condition of the City's finances, it would be best to acquire said lands at the present time.

CHIEF ENGINEER'S OFFICE—AQUEDUCT COMMISSIONERS,
ROOM 213, STEWART BUILDING,
NEW YORK, March 3, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—In compliance with a verbal request made by your Committee to the Chief Engineer of the Croton Aqueduct and to myself, that we jointly present to your Committee a plan of the location of the proposed Jerome Park Reservoir, I beg to submit the accompanying plan.

I am authorized by Mr. Birdsall to state that he agrees with me on the proposed location.

The line of the reservoir proper includes an approximate area of 200 acres. After taking all the land necessary for the embankments and for the roads that you may deem proper to build in connection with the reservoir, the area of the land to be taken will be about 250 acres.

The plan presented shows in red lines the location of the streets laid out by the Park Department, and the dotted lines indicate the highways which, I think, should be constructed to surround the reservoir and to connect the lines proposed by the Park Department or by its successor.

The first reports made to the Aqueduct Commissioners as to the proposed reservoir place the approximate estimated cost of the proposed reservoir, exclusive of land, at more than two million dollars for a capacity of 1,200 million gallons.

By the plan then contemplated the maximum depth of water would have been less than twenty feet.

A subsequent estimate made for a depth twelve or thirteen feet greater, with a total capacity of 1,750 million gallons, shows an increased cost of two and one-half million dollars, making the total estimated cost between four and one-half and five million dollars, exclusive of the cost of land. This high estimate is due to the necessity of excavating enormous quantities of materials for the purpose of deepening the reservoir, and of increasing its capacity.

The soundings made in 1885 and 1886 show that the excavation would include the removal of a large amount of rock, but they are not sufficient to indicate fully in what proportion.

From the present indications I believe that one-half of the proposed additional deepening would be sufficient, with an approximate capacity of 1,500 million gallons.

In those conditions the approximate cost of the reservoir would be from three and one-half to four million dollars, exclusive of the cost of land.

As the large amount of materials to be excavated could not be easily disposed of in the immediate neighborhood of the proposed reservoir without the additional acquirement of land of com-

paratively high value I suggest the possibility of depositing them in Van Cortlandt Park, and in its vicinity, where there are vast areas of low lands which could be reclaimed by filling, at a profit to the City.

I need not recall here the fact that our engineering advisers, as well as those of the Department of Public Works, have been of the unanimous opinion that a large reservoir at Jerome Park is a matter of necessity for the welfare of the water supply of New York; they have differed somewhat in regard to the time beyond which this improvement should not be postponed; but considering the time which has elapsed since the various opinions were expressed and the number of years necessary for construction, it is plain that the consensus of opinion points to the advisability of an early beginning of the work. Moreover, the real estate experts employed by the Aqueduct Commissioners have advised that it would be against the interests of the City to postpone the acquirement of the necessary lands.

The following, a brief synopsis of the various actions taken by the Aqueduct Commissioners at different times on the question of the proposed reservoir, may not be out of place in connection with the above statements, and may assist your Committee in its research among the records of the Aqueduct Commission.

In 1884, on the representation of the Chief Engineer of the Commission (see report of Chief Engineer, July 2, 1884), that for the better distribution of the water supply, a large reservoir should be built near the lower part of the Aqueduct for the supply of the northern districts of the city, probably in Jerome Park, thus avoiding the necessity of conveying to the Central Park reservoir the full contents of the New Aqueduct, the Aqueduct Commission (see report July 16, 1884), to reduce the capacity of the Aqueduct from a point near Mosholu avenue in the vicinity of Shaft 20, from 318 million gallons to 250 million gallons per twenty-four hours.

This resolution having been carried out in construction, the omission of the proposed reservoir would practically render useless the larger carrying capacity of the Aqueduct above Shaft 20, a distance of about twenty-five miles.

From April, 1885, to June, 1886, an engineering party made surveys and soundings to establish the location and the approximate cost of the reservoir.

On June 15, 1886, the Chief Engineer reported that the proposed reservoir would cover 207 acres, and that with a maximum depth of 10 feet, the contents of the reservoir would be 1,047 million gallons, at an approximate cost of $2,172,000, exclusive of land.

October 19, 1887.—The Committee on Real Estate reported that proceedings should be begun, and that the Commissioner of Public Works be requested to furnish plans for the taking of land. Referred to Committee on Construction.

November 1, 1887.—Engineer requested to report further on the subject.

November 28.—Report of Committee on Real Estate of October 19 read and laid on the table until Engineer reports.

January 9, 1888.—Engineer ordered to report on 16th instant.

January 16, 1888.—Report of the Engineers concludes to the necessity of a reservoir, and to the advisability of locating it at Jerome Park. This report was on the same plan as before presented, and places the cost above $2,000,000, exclusive of land.

March 3, 1888.—By request, the Engineer reports that if the reservoir was deepened to increase its capacity, new surveys would be necessary, and the approximate increase of cost would be $2,500,000.

March 5, 1888.—Committee on Construction laid Chief Engineer's report on the table for further reference.

May 29, 1889.—After reading the communication of Leonard W. Jerome as to the decision of the Aqueduct Commissioners in the premises, Chief Engineer of the Aqueduct Commission and Chief Engineer Birdsall are requested to report.

June 4, 1889.—Chief Engineer A. Fteley and George W. Birdsall presented their report, with the following conclusions :

A large reservoir must be built in the vicinity. After careful examination, Jerome Park is the best location. A. Fteley, however, is of the opinion that the reservoir should be built without more delay, while Mr. Birdsall thinks that it will not be necessary before ten (10) years. Both concluded to the advisability of considering the present and prospective value of the land, in view of its acquirement by the City.

June 12, 1889—The Aqueduct Commission appointed Michael Coleman and Hugh N. Camp to report whether, in their opinion, it would be for the interest of the City to secure at present or at a later date the necessary ground.

June 21, 1889—Mr. Coleman declines to serve, but advises the Commission to consider the possibility of a decline as well as of a rise in the real estate market. Commissioners appoint in his place Mr. Charles S. Brown.

August 7, 1889—Messrs. Camp and Brown reported that, in their opinion, it would be for the interest of the City to now acquire the necessary lands. Their report is referred to a committee composed of the Mayor, the Comptroller and the Commissioner of Public Works, to report whether, in the present condition of the City finances, it would be best to acquire the lands at this time.

November 12, 1890—The Secretary is requested to submit to the Commissioners all the documentary evidence on the subject for the information of the Committee just named, which is to report on it.

It being then mentioned that the Chief Engineers of the two departments do not fully agree on the proposed location, Mr. A. Fteley and George W. Birdsall are requested to confer on the subject, and to prepare plans in common.

March 3, 1890—Plan for the location of the reservoir, in which Mr. Birdsall concurs, presented this day to the Committee on Construction by the Chief Engineer.

I am, respectfully,

A. FTELEY, Chief Engineer.

On motion of Commissioner Scott, the report was approved.

The Committee also recommended the adoption of the following resolution :

Resolved, That the bill of John S. Reed, amounting to one hundred and eighty dollars and eighty-five cents, for board for the topographical party recently employed on detached duty at Double Reservoir "I," be and the same is hereby approved, and a warrant is hereby ordered drawn for the payment of the same.

The same was adopted by the following vote :

Affirmative—The Comptroller and Commissioners Duane, Scott and Cannon—4.

The Committee also recommended the adoption of the following resolution :

Resolved, That the following preamble and resolution, adopted by the Commissioners on December 26, 1889, be and the same is hereby reconsidered :

"Whereas, It appears from a communication of the Chief Engineer, submitted to the Aqueduct Commissioners on November 20, 1889, that the contractors for the construction of Section 16 of the New Aqueduct were obliged to stop work between the points therein named, in order that a defective sewer found at said point might be repaired, and that in order to do the work of repairing said sewer conveniently a quantity of earth was unavoidably thrown over the forty-eight-inch pipes which had been already laid by the contractors for the construction of said section, and some of said

pipes displaced and covered with mud ; and it appearing from a report of Division Engineer Wegmann, dated December 12, 1889, that the contractors for the construction of said pipe-line were prevented from working on said pipe-line between One Hundred and Seventh and One Hundred and Tenth streets, from November 14, 1888, to May 18, 1889 ; and that when they were finally allowed to proceed with their work they were required to do considerable work in the way of removing earth, cleaning out the pipes, and rolling said pipes into line again ; and it appearing that the doing of said work was not provided for in the contract for the construction of said Section 16 ; therefore,

"Resolved, That, upon the recommendation of the Chief Engineer and Division Engineer Wegmann, O'Brien & Clark be and they are hereby allowed the sum of five hundred dollars for doing the work referred to, providing said O'Brien & Clark waive all claim for damages on account of the interruption to their work on said section during the time above referred to."

And, in lieu thereof, report in favor of the adoption of the following preamble and resolution :

Whereas, It appears from a communication of the Chief Engineer, submitted to the Aqueduct Commissioners, on November 20, 1889, that the contractors for the construction of Section 16 of the New Aqueduct were obliged to stop work between the points therein named, in order that a defective sewer found at said point might be repaired, and that in order to do the work of repairing said sewer conveniently a quantity of earth was unavoidably thrown over the forty-eight-inch pipes which had been already laid by the contractors for the construction of said section, and some of said pipes displaced and covered with mud, and it appearing from a report of Division Engineer Wegmann, dated December 12, 1889, that the contractors for the construction of said pipe-line were prevented from working on said pipe-line between One Hundred and Seventh and One Hundred and Tenth streets, from November 14, 1888, to May 18, 1889 ; and that when they were finally allowed to proceed with their work they were required to do considerable work in the way of removing earth, cleaning out the pipes, and rolling said pipes into line again, and it appearing that the doing of said work was not provided for in the contract for the construction of Section 16 ; therefore,

Resolved, That, upon the recommendation of the Chief Engineer and Division Engineer Wegmann, O'Brien & Clark be and they are hereby allowed the sum of five hundred dollars for doing the work referred to, providing said O'Brien & Clark waive all claim for damages on account of the interruption to their work between One Hundred and Seventh and One Hundred and Tenth streets.

On motion of Commissioner Scott, the report was laid on the table.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, the bill presented by O'Brien & Clark for the sum of forty-nine dollars for extra work done on Section 16 of the New Aqueduct in the way of setting cap-stones for receiving-basin, be and the same is hereby approved, and a warrant is hereby ordered drawn for the payment of said amount.

The same was adopted by the following vote :

Affirmative—The Comptroller, and Commissioners Duane, Scott and Cannon—4.

The Committee also recommended the adoption of the following preambles and resolution :

Whereas, On the 10th day of December, 1890, the Aqueduct Commissioners adopted a resolution providing for the payment to O'Brien & Clark, the contractors for the construction of Section 9 of the New Aqueduct, of the sum of fifty-two thousand four hundred and fifty-one dollars, provided the bondsmen for said contractors should consent to such payment ; and

Whereas, It appears from a communication this day received from said O'Brien & Clark that Maurice B. Flynn and Thomas Cornell, two of the bondsmen on the contract for said section, are dead ; and

Whereas, The Chief Engineer, under date of December 9, 1890, reported that said Section 9 was completed, and that the final estimate was delayed only by the complications introduced in the measurement of the work by the repairs thereon, and that the amount specified in said resolution, to wit, fifty-two thousand four hundred and fifty-one dollars, could be safely paid to said contractors on account of said section ; now, therefore,

Resolved, That so much of the aforesaid resolution of December 10, 1890, as required the consent of the bondsmen of said contractors to said payment be and the same is hereby rescinded.

On motion of Commissioner Scott, the same were adopted.

The Committee also recommended the adoption of the following preamble and resolutions :

Whereas, The Chief Engineer of this Commission has certified in writing, that, in his opinion, O'Brien & Clark have completely performed and carried out the provisions of the contract made by them with this Commission on the 17th day of May, 1888, for the construction of Section 16 of the New Aqueduct, and has stated from actual measurements the whole amount of work done and materials furnished under and according to the terms of said contract, and of the true value thereof ; now, therefore, be it

Resolved, That the Aqueduct Commissioners do accept the work done and materials furnished by O'Brien & Clark, under said contract, and that a proper voucher for the amount due for the work so done and materials furnished be approved by the Commissioners, and certified to the Comptroller for payment ; and the Comptroller is hereby requested to pay the amount of said final estimate without any deduction for overtime ; and the attention of the Comptroller is hereby called to the bill of the MacKnight Flintic Stone Company, amounting to seventy-five dollars, which amount has been paid to said Stone Company, and which amount, in the judgment of the Aqueduct Commissioners, should be charged against said section ; also

Resolved, That so much of the resolution of December 10, 1890, releasing to the contractors for said Section 16, the sum of forty-nine thousand five hundred dollars, as required the consent of the sureties to the payment of the sum so released be and hereby is rescinded.

On motion of the Comptroller, the same were laid on the table.

The Secretary gave notice of the filing of mechanics' liens against Heman Clark and the Mayor, etc., of the City of New York, for work done on Section B of the New Aqueduct, by the following persons and for the following amounts :

John McAleese	$262 50	John Miller	$90 00
John Forbes	158 80	William James	167 00
John Kennedy	82 30	Barney Bowe	110 25
William O'Brien	46 85	Peter Crowley	222 00
Harry James	288 00	Peter A. Russell	247 00
Norman Smith	78 20	Joseph Howell	63 50
Michael Flanigan	202 10	Edwin Waine	73 50
Earley Meiner	79 50	Benjamin Van Tassell	241 20
Thomas Riley	19 80		

Which were ordered filed.

The Comptroller, under date of February 28, 1891, gave notice of the issue of warrants for the payment of vouchers not certified to by the Aqueduct Commissioners for

Reservoir "M"	$360 92
Sodom Dam and Reservoirs	3,580 26
New York Section	280 00
Manhattan Island Section	192 00
Manhattan Island Section, additional lands	192 00
Double Reservoir "I" (Sodom Dam)	30,081 19
Westchester County Section	1,485 70
New York Section	100 00
Westchester County Section	3,723 21
Sodom Dam and Reservoirs	717 69
Reservoir "D"	4,939 64
Manhattan Island Section, additional lands	239 58

—leaving a balance to the credit of Additional Water Fund of $4,883.88.

Which were ordered entered upon the books of the Commission and filed.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Special Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Thursday, March 19, 1891, at 3 o'clock P. M.

Present—The Comptroller, and Commissioners Duane, Scott and Cannon.

The Committee of Finance and Audit reported their examination and audit of bills contained in vouchers Nos. 6782 to 6800, inclusive, amounting to $905.53; also of bills contained in vouchers Nos. 6801 to 6805, inclusive, amounting to $1,661.82.

On motion of Commissioner Scott, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following communication, received from the Chief Engineer, and recommended that the same be spread in full on the minutes and filed:

NEW YORK, March 17, 1891.

Schedule of the flow at Croton Dam into the New Aqueduct, as per request of the Chief Engineer of the Croton Aqueduct:

Since March 10, the date of my last report, the flow of water has continued at the rate of seventy million gallons per twenty-four hours.

A. FTELEY, Chief Engineer.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also presented the following:

The Construction or Executive Committee report:

That they have examined the claims of James Walstead and James Brown, who had been employed as Inspectors of Masonry up to the 15th of January, 1891, asking that they be allowed the sum of $61.94, respectively, for salary for the balance of said month; and having been advised by the Counsel to the Corporation, under date of March 11th, 1891, that the claimants' right to pay ceased on January 15th, we recommend the adoption of the following resolution:

Resolved, That the claims of James Walstead and James Brown, above referred to, be and the same are hereby denied.

On motion of Commissioner Scott, the report was adopted.

The Committee also presented the following communication, received from the Chief Engineer, and also the following opinion, received from the Counsel to the Corporation, and recommended that the same be spread in full on the minutes and filed :

NEW YORK, Mach 17th, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN Since submitting my letter of this date, relative to the raising of the water in the Sodom Reservoir, I have received from the Counsel to the Corporation the accompanying answer.

I subsequently met again with the manager of the milk factory, and we agreed that until legal proceedings are instituted in their case we would see that a sufficient amount of water is furnished to them, provided it is not beyond the natural flow of the shed.

He does not enter any objections to our storing the balance of the water furnished by the river.

Division Engineer Burbank is instructed to follow this course until further orders.

I must call your attention to the necessity of instituting legal proceedings in this case as soon as possible.

I am, very respectfully,
A. FTELEY, Chief Engineer.

LAW DEPARTMENT,
OFFICE OF THE COUNSEL TO THE CORPORATION,
NEW YORK, March 17, 1891.

A. FTELEY, Esq., *Chief Engineer :*

DEAR SIR—I am in receipt of your letter, under date of March 13, stating it is imperative for the welfare of the water supply of the City of New York that the gates at Sodom Dam be shut and the water allowed to rise in the reservoir, and that by so doing the operations of Borden's Condensed Milk Factory will be affected, so far as the supply of water used by such factory for power is concerned.

You request that I furnish you with any information or advice in the premises that I deem necessary.

It is my opinion that the City of New York has no legal right to deprive the condensed milk factory of any portion of the natural flow of this stream without compensating them.

I am informed that in addition to this milk factory there are two other factories on this stream using this water for power at the present time, which factories would also be affected by your proposed action. In my opinion the shutting of the gates of this reservoir at the present time would be an illegal act, and might furnish sufficient ground for either of these mill owners to obtain an injunction against the City.

I would, therefore, advise that you permit the natural flow of the stream to pass by the dam, storing only the surplus waters of this river until the City is vested with the right to control these waters in the proceeding about to be instituted for that purpose.

I am, sir, yours respectfully,
WM. H. CLARK, Counsel to the Corporation.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also presented the following communication :

NEW YORK, March 17, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—Under your instructions, that I allow the water to rise in the East Branch Reservoir, I have given orders to shut the gates at the dam, allowing, however, such quantity of water to flow as will be taken by the five twelve-inch pipes connected with the gate-house.

The manager of the milk factory at Brewster's has notified Division Engineer Burbank not to interfere with the natural flow of the stream. The amount of water now flowing is, in my judgment, ample for all their purposes.

I had this morning a conversation with the manager of the milk factory and his attorney, and they expect to ask you for a hearing this afternoon.

At the request of Mr. H. T. Dykman I had submitted through him to the Counsel to the Corporation a statement, a copy of which is inclosed.

I am, very respectfully,

A. FTELEY, Chief Engineer.

And recommended the adoption of the following preamble and resolution :

Whereas, The Chief Engineer, under date of March 17, 1891, has reported to the Committee on Construction a correspondence had between himself and the Counsel to the Corporation, relative to the water rights below the masonry dam at Sodom, Westchester County, New York ; therefore,

Resolved, That the action so taken, as reported to us, be approved ; and that the Counsel to the Corporation be and hereby is requested to take at once such steps as may be necessary to vest the City with the right to control the flow of water below the masonry dam at Sodom.

On motion of the Comptroller, the report and resolution were laid on the table.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, the accompanying bill of Messrs. James Kelly and Charles Gardner, being for work done at the Pocantico gate-house, amounting to $166.36, be and the same is hereby approved and ordered certified to the Comptroller for payment ; an amount sufficient to cover said bill having been deducted from the final estimate in favor of Brown, Howard & Co., for work done on Section 4 of the New Aqueduct.

On motion of the Comptroller, the same was laid on the table.

The Committee also presented the following communication, received from the Chief Engineer :

NEW YORK, March 17, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—In December, 1890, I obtained, with your authority, bids from two parties out of three who had been asked to make proposals for stop-planks for the dams in Brewster's. These bids were based on drawings which represented the whole of the stop-planks to be furnished. Subsequently, however, it was found advisable to limit the order to the East Branch Reservoir.

It now becomes necessary to fit up Bog Brook Dam, and this is to ask you to give an additional order to the lowest bidder, Mr. Charles W. Palmer, for this work, at the price bid by him, which I consider reasonable.

The cost of the work will not exceed $2,000, including two sets of differential pulleys.

I am, very respectfully,

A. FTELEY, Chief Engineer.

And recommended the adoption of the following resolution :

Resolved, That the Chief Engineer be and he is hereby authorized to contract with Charles W. Palmer for the work referred to in the foregoing communication, at the prices submitted by him in

his bid of December 22, 1890, only a portion of his bid having at that time been accepted; the expense of said work not to exceed the sum of two thousand dollars; and an appropriation of said amount is hereby made to cover the work in question.

The report was adopted by the following vote:

Affirmative—The Comptroller, and Commissioners Duane, Scott and Cannon—4.

The Committee also presented the following:

The Construction or Executive Committee present herewith forms of contract, specifications and bond, received from the Commissioner of Public Works on the 18th instant, to provide for building a blow-off at Shaft No. 24, on Section No. 11 (a) of the New Aqueduct, and recommend the adoption of the following resolution:

Resolved, That the forms of contract, specifications and bond, submitted by the Commissioner of Public Works on March 18, 1891, and approved by the Counsel to the Corporation "as to form," for building a blow-off at Shaft No. 24, on Section No. 11 (a) of the New Aqueduct, be and the same are hereby approved and adopted; and the Secretary is hereby directed to have triplicate copies thereof prepared for certification by the Aqueduct Commissioners and filed in accordance with section 25, chapter 490, Laws of 1883.

Resolved, That the President and Secretary be and they are hereby directed to advertise in the CITY RECORD, New York "World" and "Commercial Advertiser" a notice and advertisement inviting sealed bids or proposals for building a blow-off at Shaft No. 24, on Section No. 11 (a) of the New Aqueduct, as provided in the contract and specifications this day approved and adopted by the Aqueduct Commissioners.

The same was adopted by the following vote:

Affirmative—The Comptroller, and Commissioners Duane, Scott and Cannon—4.

The Secretary gave notice of the filing of a lien by Paige, Carey & Co. against O'Brien & Clark, for work done and materials furnished in the construction of Section 9 of the New Aqueduct, amounting to $51,871.94.

Which was ordered filed.

The Secretary presented the following communication, received from the Chief Engineer:

NEW YORK, March 17, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—I see in the minutes of the Aqueduct Commissioners that you laid on the table my request that I be authorized to spend a further sum of $1,000 for the purpose of preparing models for the coming litigation in regard to Section No. 6, and I have consequently stopped work on the same.

Since then two of our counsel in the case have informed me that they attach a great deal of importance to the matter, and requested me to inform you of their wishes in the matter.

The time from date to the probable opening of the case is none too long for the necesary work to be done.

I am, very respectfully,

A. FTELEY, Chief Engineer.

On motion of Commissioner Scott, the communication of the Chief Engineer and resolution accompanying the same, presented by the Committee on Construction on March 10, 1891, were then called from the table.

On motion of Commissioner Scott, the resolution was then amended to read as follows:

Resolved, That the authority asked for by the Chief Engineer, as set forth in the foregoing communication, be and hereby is granted, and the appropriation made on January 15, 1889, is hereby increased to the sum of $750, to cover the work in question.

The resolution was then adopted by the following vote:

Affirmative—The Comptroller, and Commissioners Duane, Scott and Cannon—4.

On motion of Commissioner Scott, the following preamble and resolutions, laid on the table on the 11th instant, were taken from the table:

"Whereas, The Chief Engineer of this Commission has certified in writing that, in his opinion, O'Brien & Clark have completely performed and carried out the provisions of the contract made by them with this Commission on the 17th day of May, 1888, for the construction of Section 16 of the New Aqueduct, and has stated from actual measurements the whole amount of work done and materials furnished under and according to the terms of said contract, and of the true value thereof; now, therefore, be it

"Resolved, That the Aqueduct Commissioners do accept the work done and materials furnished by O'Brien & Clark, under said contract, and that a proper voucher for the amount due for the work so done and materials furnished be approved by the Commissioners and certified to the Comptroller for payment; and the Comptroller is hereby requested to pay the amount of said estimate without any deduction for overtime; and the attention of the Comptroller is hereby called to the bill of the MacKnight Flintic Stone Company, and which amount, in the judgment of the Aqueduct Commissioners, should be charged against said section; also

"Resolved, That so much of the resolution of December 10, 1890, releasing to the contractors for said Section 16 the sum of forty-nine thousand five hundred dollars as required the consent of the sureties to the payment of the sum so released be and hereby is rescinded."

The same were then adopted by the following vote:

Affirmative—The Comptroller, and Commissioners Duane, Scott and Cannon - 4.

The Secretary gave notice of the filing of mechanics' liens against Heman Clark and the Mayor, etc., of the City of New York, for work done on Section B of the New Aqueduct, by the following persons, and for the following amounts:

Ben Joell	$4 50	A. Brazzini	$31 95
A. C. Johnson	59 50	Joe Dal	19 05
James Rudolph	47 50	Joe Dunnetty	28 65
Jerry Collins	53 10	Oscar Carlson	35 25
B. Zing	40 50	Frank Coffey	6 40

James McCue	$32 70	P. Woodchuch	$5 00
William Thornton	28 00	A. Osieo	12 75
Sam Rubin	40 95	Thomas Driscoll	19 50
Daniel Wilson	32 25	Mike Madden	17 40
C. McNeil	31 25	Antony Maria	37 35
Tom Zing	40 95	Mike Nicholas	16 20

Which were ordered filed.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, March 25, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

On motion of Commissioner Scott, the minutes of special meeting of March 10, 1891, were ordered approved.

The Committee of Finance and Audit reported their examination and audit of Voucher No. 6807, being estimate for work done on Section 16 of the New Aqueduct, amounting to $1,161.05; also of bills contained in Vouchers Nos. 6808 to 6827, inclusive, amounting to $1,733.86.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following:

The Construction or Executive Committee present herewith final plan sheet, described as "Exhibit No. 1, of 1891," submitted by the Commissioner of Public Works on March 19, 1891, showing certain parcels of land required for the construction of Reservoir "D," on the west branch of the Croton river, near Carmel, in Putnam County, New York; and recommend the adoption of the following resolution:

Resolved, That for the more efficient carrying out of the provisions of chapter 490 of the Laws of 1883, and the acts amendatory thereof, we, the Aqueduct Commissioners, do hereby approve and adopt the aforesaid final plan sheets, showing lands required for the construction of said Reservoir "D," and direct that the same be duly certified and filed in this office, and designated "Final Plan Sheet No. 1, of 1891," and that a copy thereof be certified and transmitted to the Commissioner of Public Works for filing in his office, as required by section 2 of the aforesaid act; and the Commissioner of Public Works is hereby requested to submit the six similar property maps describing the lands to be acquired for the construction of said reservoir.

The report was adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also presented the following communication received from the Secretary:

NEW YORK, March 24, 1891.

To the Committee on Construction:

GENTLEMEN—At a meeting of the Aqueduct Commissioners, held on May 17, 1889, the following resolution was adopted:

"Resolved, That in view of the urgent necessity of acquiring title to certain additional parcels of land required for the completion and maintenance of Double Reservoir "1," in Putnam County, New York, we accept of the proposition of the owners thereof to take immediate possession of said parcels, and we hereby agree that payment shall be made for the lands so taken within sixty days after the filing of the report of the Commissioners appointed to appraise the value of lands taken for said reservoir, and at the same price per acre as may be awarded to said owners by said Commissioners for the lands shown on the original map filed in the Clerk's Office in Putnam County, New York, on the 17th day of May, 1887; and the Secretary is hereby directed to transmit this report to the Board of Estimate and Apportionment for their approval."

Said action was approved by said Board of Estimate and Apportionment at a meeting held on October 17 following.

The report of the Commissioners of Appraisal, afterwards submitted, shows that there was taken from Stephen C. Barnum, under condemnation proceedings, Parcels Nos. 17, 18, 18½, 21, 24, 25, 26 and 27, amounting in all to 236 acres and $\frac{708}{1000}$ of an acre, and for which the Commissioners awarded the sum of $61,179, making the price per acre paid for said lands $258.45.

The agreement, which is submitted by said Stephen C. Barnum and accepted by the Commissioners, provided for taking possession of 5.533 acres, the same to be paid for at the price per acre awarded by the Commissioners of Appraisal for lands taken under the condemnation proceedings. The amount, therefore, to be paid for the 5.533 acres, at $258.45 per acre, is $1,430, for which a voucher should be ordered drawn and certified to the Comptroller for payment.

Respectfully,

JOHN C. SHEEHAN, Secretary.

And recommended the adoption of the following resolution:

Resolved, That, upon the foregoing recommendation of the Secretary, a voucher be prepared and certified to the Comptroller, in favor of Stephen C. Barnum, for the sum of $1,430, in payment for the purchase of 5.533 acres of land, at $258.45 per acre, acquired for Aqueduct purposes, under an agreement made with said Stephen C. Barnum, dated April 23, 1889.

The report was adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also presented the following communication received from the Chief Engineer:

NEW YORK, March 24, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—In accordance with your instructions, I beg to submit the new plan of the lands to be disposed of south of the Harlem river, with the necessary descriptions.

I am, very respectfully,

A. FTELEY, Chief Engineer.

And recommended the adoption of the following resolution:

Resolved, That the plans above referred to, together with a copy of the Chief Engineer's communication giving the descriptions of lands south of the Harlem river acquired for Aqueduct pur-

poses that can be now disposed of, be transmitted to the Comptroller for submission to the Commissioners of the Sinking Fund for such action as they may deem proper.

On motion of Commissioner Scott, the report was adopted.

The Committee also presented the following communication received from the Chief Engineer, and recommended that the same be spread in full on the minutes and filed.

NEW YORK, March 24, 1891.

Schedule of flow of water at Croton Dam into the New Aqueduct, as per request of Chief Engineer of Croton Aqueduct:

Since March 17, the date of my last report, the flow of water has continued at the rate of 70,000,000 gallons per 24 hours.

A. FTELEY, Chief Engineer.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also recommended the adoption of the following resolution:

Resolved, That, upon the recommendation of the Chief Engineer, an appropriation of thirty-five dollars is hereby made for the purpose of exchanging a No. 2 Caligraph type-writing machine, for use in his office.

The same was adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also recommended the adoption of the following preambles and resolutions:

Whereas, The attention of the Aqueduct Commission has been called to a bill introduced in the Senate of the State of New York, known as "No. 435," entitled "An act to make further provision for the appraisement and payment of damages incurred by the taking, use or injury of real estate in the construction or maintenance of the works authorized by chapter 490 of the Laws of 1883, to provide an increased supply of pure and wholesome water for the City of New York"; and

Whereas, The Aqueduct Commissioners have been advised that if this bill should become a law the expense of acquiring lands would be doubled, and it would be impossible to know when the proceedings were completed, as there is no limit of time when those applications for the preparation of amended maps should be made;

Resolved, That the Aqueduct Commission do hereby protest against the passage of the act as introduced, as, in their opinion, it would impose an unnecessary and extreme burden upon the City of New York without any real or substantial benefit to any just claimant.

Resolved, That a copy of these preambles and resolutions be forwarded to the Chairman of the Committee on Cities of the Senate, and that a copy be also forwarded to the Counsel to the Corporation, with a request that he shall take such steps as, in his judgment, are necessary to prevent injury to the interests of the City by the passage of said bill.

On motion of Commissioner Scott, the same were adopted.

The Committee also recommended the adoption of the following preambles and resolutions :

Whereas, The attention of the Aqueduct Commission has been called to an act introduced in the Assembly of the State of New York, No. 1005, entitled "An Act for the relief of Edward R. Scott," which bill provides for the reimbursement to said Scott of certain legal expenses alleged to have been incurred by him in defending himself against complaints made against him before the Aqueduct Commission ; and

Whereas, The questions involved in said hearing were purely questions of fact, and did not, in the judgment of the Aqueduct Commission, require the services of any counsel for the protection of any rights that said Scott might have had ;

Resolved, That the Aqueduct Commission do protest against the passage of said act as unnecessary and unjust to the City of New York.

Resolved, That a copy of these preambles and resolutions be transmitted to the Chairman of the Committee on Claims of the Assembly, and that another copy be transmitted to the Counsel to the Corporation, and that he be requested to use all proper means to prevent the passage of said bill.

On motion of Commissioner Tucker, the same were adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That we approve of the action of the Secretary in arranging for renewal of the leases of rooms now occupied by the Aqueduct Commissioners in the Stewart Building, No. 280 Broadway, New York City.

On motion of Commissioner Scott, the same was adopted.

The following report, laid on the table on the 19th instant, was taken from the table and read :

"The Committee also presented the following communication :

NEW YORK, March 17, 1891.

To the Honorable the Committee on Construction :

Gentlemen—Under your instructions, that I allow the water to rise in the East Branch Reservoir, I have given orders to shut the gates at the dam, allowing, however, such quantity of water to flow as will be taken by the five 12-inch pipes connected with the gate-house.

The manager of the milk factory at Brewsters has notified Division Engineer Burbank not to interfere with the natural flow of the stream. The amount of water now flowing is, in my judgment, ample for all their purposes.

I had this morning a conversation with the manager of the milk factory and his attorney, and they expect to ask you for a hearing this afternoon.

At the request of Mr. H. T. Dykman, I had submitted through him to the Counsel to the Corporation a statement, a copy of which is inclosed.

I am, very respectfully,

A. FTELEY, Chief Engineer.

And recommend the adoption of the following preamble and resolution :

Whereas, The Chief Engineer, under date of March 17, 1891, has reported to the Committee on Construction a correspondence had between himself and the Counsel to the Corporation, rela-

tive to the water rights below the masonry dam at Sodom, Westchester County, New York ; therefore,

Resolved, That the action so taken, as reported to us, be approved ; and that the Counsel to the Corporation be and hereby is requested to take at once such steps as may be necessary to vest the City with the right to control the flow of water below the masonry dam at Sodom."

On motion of Commissioner Cannon, the report was then adopted.

The following resolution, laid on the table on the 19th instant, was taken from the table and read :

"Resolved, That, upon the recommendation of the Chief Engineer, the accompanying bill of Messrs. James Kelly and Charles Gardner, being for work done at the Pocantico Gate-house, amounting to one hundred and sixty-six dollars and thirty-six cents, be and the same is hereby approved, and ordered certified to the Comptroller for payment ; an amount sufficient to cover said bill having been deducted from the final estimate in favor of Brown, Howard & Co. for work done on Section 4 of the New Aqueduct."

The same was then adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, April 1, 1891, at 3 o'clock, P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

In the absence of the Secretary, Auditor J. C. Lulley acted as Secretary pro tem.

On motion of Commissioner Scott, the minutes of meetings of March 11 and 19, 1891, were ordered approved.

The Committee of Finance and Audit reported their examination and audit of bills contained in Vouchers Nos. 6833 to 6849, inclusive, amounting to $742.52.

On motion of Commissioner Tucker, the same were approved, and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following communication, received from the Chief Engineer, and recommended that the same be spread in full on the minutes and filed:

NEW YORK, March 31, 1891.

Schedule of flow of water at Croton Dam into the New Aqueduct, as per request of Chief Engineer of Croton Aqueduct.

Since March 24, the date of my last report, the flow of water has continued at the rate of 70,000,000 gallons per 24 hours.

A. FTELEY, Chief Engineer.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also presented the resignation of Fred. E. Waldron, Rodman, and recommended that the same be accepted, to take effect from March 24 last.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also recommended the adoption of the following resolution:

Resolved, That the action of the Chief Engineer in assigning Superintendent of Dam Construction P. J. Moynihan to duty under Division Engineer Craven, at Carmel, on March 24, 1891, be and hereby is approved.

On motion of Commissioner Cannon, the same was adopted.

The Committee also recommended the adoption of the following preamble and resolution:

Whereas, An application has been made by Breuchaud, Pennell & Co., contractors, for an extension of time to October 16, 1891, for the completion of the work embraced in their contract for the construction of eleven head-house superstructures, etc., for the shafts of the New Croton Aqueduct, and the Chief Engineer having recommended that an extension of time be granted to September 1, 1891, for the completion of said work; therefore

Resolved, That the Aqueduct Commissioners hereby grant to Breuchaud, Pennell & Co., contractors, an extension of time to September 1, 1891, to complete the work above referred to, provided their bondsmen shall, within ten days from the date hereof, enter into stipulations continuing their obligations for and during the completion of said contract, under said extension of time, which is hereby allowed to them as further time for the performance of said contract.

On motion of Commissioner Scott, the same were adopted.

The following resolutions, laid on the table on March 11 last, were taken from the table and read:

"Resolved, That the following preamble and resolution, adopted by the Commissioners on December 26, 1889, be and the same is hereby reconsidered:

Whereas, it appears from a communication of the Chief Engineer, submitted to the Aqueduct Commissioners on November 20, 1889, that the contractors for the construction of Section 16 of the New Aqueduct were obliged to stop work between the points therein named, in order that a defective sewer found at said point might be repaired, and that in order to do the work of repairing said sewer conveniently a quantity of earth was unavoidably thrown over the 48-inch pipes which had been already laid by the contractors for the construction of said section, and some of said pipes displaced and covered with mud; and it appearing from a report of Division Engineer Wegmann, dated December 12, 1889, that the contractors for the construction of said pipe-line were prevented from working on said pipe-line between One Hundred and Seventh and One Hundred and Tenth streets from November 14, 1888, to May 18, 1889, and that when they were finally allowed to proceed with their work they were required to do considerable work in the way of removing earth, cleaning out the pipes, and rolling said pipes into line again; and it appearing that the doing of said work was not provided for in the contract for the construction of Section 16; therefore,

Resolved, That, upon the recommendation of the Chief Engineer and Division Engineer Wegmann, O'Brien & Clark be and they are hereby allowed the sum of five hundred dollars for

doing the work referred to, providing said O'Brien & Clark waive all claim for damages on account of the interruption to their work on said section during the time above referred to."

—and in lieu thereof, report in favor of the adoption of the following preamble and resolution :

Whereas, It appears from a communication of the Chief Engineer, submitted to the Aqueduct Commissioners on November 20, 1889, that the contractors for the construction of Section 16 of the New Aqueduct were obliged to stop work between the points therein named, in order that a defective sewer found at said point might be repaired, and that in order to do the work of repairing said sewer conveniently a quantity of earth was unavoidably thrown over the 48-inch pipes which had been already laid by the contractors for the construction of said section, and some of said pipes displaced and covered with mud ; and it appearing from a report of Division Engineer Wegmann, dated December 12, 1889, that the contractors for the construction of said pipe-line were prevented from working on said pipe-line between One Hundred and Seventh and One Hundred and Tenth streets, from November 14, 1888, to May 18, 1889 ; and that when they were finally allowed to proceed with their work they were required to do considerable work in the way of removing earth, cleaning out the pipes, and rolling said pipes into line again ; and it appearing that the doing of said work was not provided for in the contract for the construction of Section 16 ; therefore,

Resolved, That, upon the recommendation of the Chief Engineer and Division Engineer Wegmann, O'Brien & Clark be and they are hereby allowed the sum of five hundred dollars for doing the work referred to, providing said O'Brien & Clark waive all claim for damages on account of the interruption to their work between One Hundred and Seventh and One Hundred and Tenth streets.

The same were then adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Howe—4.

The Committee also recommended the adoption of the following resolution :

Resolved, That the Chief Engineer be and he is hereby authorized to notify Douglass Robinson, Jr., the owner of the premises situated on St. Nicholas avenue, between One Hundred and Twenty-fifth and One Hundred and Twenty-sixth streets, and known as the office of Division Engineer Wegmann, that the Aqueduct Commissioners desire to renew the lease of said premises at the reduced rental of nine hundred dollars per annum.

On motion of Commissioner Scott, the same was adopted.

The Secretary gave notice of the filing of a lien by Thornton N. Motley & Co. against O'Brien & Clark, contractors, for materials furnished in the construction of Section 16 of the New Aqueduct, amounting to $308.13.

Which was ordered filed.

The Commissioners then adjourned.

J. C. LULLEY, Secretary pro tem.

AQUEDUCT COMMISSION.

Minutes of Special Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, April 8, 1891, at 3 o'clock P. M.

Present—The Comptroller, and Commissioners Duane, Tucker, Scott and Cannon.

In pursuance to the following notice, published for fifteen consecutive days, commencing with March 21, 1891, in the CITY RECORD, "New York World" and "Commercial Advertiser," bids were received for building the blow-off at Shaft No. 24, on Section No. 11 (a) of the New Croton Aqueduct:

AQUEDUCT COMMISSIONERS' OFFICE,
ROOM 209 STEWART BUILDING, No. 280 BROADWAY,
NEW YORK, March 21, 1891.

To Contractors:

Bids or proposals for building a blow-off at Shaft No. 24, on Section No. 11 (a) of the New Aqueduct, as called for in the approved forms of contract and specifications on file in the office of the Aqueduct Commissioners, will be received at this office until 3 o'clock P. M., on April 8, 1891, at which place and hour they will be publicly opened by the Aqueduct Commissioners, and the award for doing said work will be made by said Commissioners as soon thereafter as possible.

Blank forms of contract and specifications therefor, and bids or proposals, and proper envelopes for their inclosure, can be obtained at the above office of the Aqueduct Commissioners on application to the Secretary.

By order of the Aqueduct Commissioners.

JAMES C. DUANE, President.

JOHN C. SHEEHAN, Secretary.

The following bids received for doing said work, upon which the required deposits had been made, were then opened and read aloud by the Secretary:

No. 1. Clinton Stephens	$42,325 00
No. 2. Charles McDermott	26,490 00
No. 3. W. H. Baker	25,800 00
No. 4. J. J. Ridgway	34,475 00
No. 5. J. M. Waddle	21,531 25

Whereupon, on motion of Commissioner Scott, the following preamble and resolution were adopted :

Whereas, Bids for building the blow-off at Shaft No. 24, on Section No. 11 (a) of the New Croton Aqueduct having been received and publicly opened and read ; therefore

Resolved, That the Chief Engineer is hereby directed to have said bids calculated and tablulated, and submit the same, together with his estimates of the work, at a meeting of the Construction or Executive Committee of the Aqueduct Commissioners, for consideration and canvassing by them at 3 o'clock P. M., on the 14th day of April, 1891 ; and the bids and checks of the bidders so received are hereby referred to the Committee of Finance and Audit for examination and report to the Commissioners as to their formality and the sufficiency of the sureties proposed by the bidders.

The Committee of Finance and Audit reported their examination and audit of bills contained in vouchers Nos. 6850 to 6867, inclusive, amounting to $2,780.94 ; also of vouchers Nos. 6869 to 6871, inclusive, amounting to $10,742.53.

On motion of Commissioner Tucker, the same were approved, and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following communication, received from the Chief Engineer, and recommended that the same be spread in full on the minutes and filed :

NEW YORK, April 7, 1891.

Schedule of the flow of water at Croton Dam into the New Aqueduct, as per request of Chief Engineer of Croton Aqueduct.

At 5 P. M., on March 31 last, the flow of water was increased from 70,000,000 to 80,000,000 gallons per 24 hours.

A. FTELEY, Chief Engineer.

On motion of Commissioner Tucker, the recommendation was approved.

The Committee also recommended the adoption of the following resolution :

Resolved, That the action of the Chief Engineer in detailing Isaac S. Rossell, Superintendent of Dam Construction, to work on the dams at Carmel, under the supervision of Division Engineer Craven, on the 3d instant, be and hereby is approved.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That upon the recommendation of Division Engineer Alfred Craven, a leave of absence is hereby granted to William Horton, Axeman, for six months from April 1, 1891, without pay, and until he shall be assigned to duty by the Chief Engineer.

On motion of Commissioner Tucker, the same was adopted.

The Committee also presented the resignation of Assistant Engineer William D. Kelly, Jr., and recommended that the same be accepted, to take effect on the 10th instant.

On motion of Commissioner Scott, the same was accepted.

The Committee also presented the following:

The Construction or Executive Committee report:

That at a meeting of said Committee, held on the 7th instant, the following resolution was adopted, and they now ask your approval of their said action.

Resolved, That the bid-box be closed and the keys given to the President; and that the Secretary, John C. Sheehan, be authorized by this Commission to receive the bids for building the blow-off at Shaft No. 24, on Section No. 11 (a) of the New Croton Aqueduct, as called for in the approved forms of contract and specifications on file in the office of the Aqueduct Commissioners; also to receive the checks of the bidders, and to make the necessary preparations for opening the bids received for doing said work under the law.

On motion of Commissioner Scott, the action of the Committee was approved.

The Committee also presented the following communications, received from the Chief Engineer:

NEW YORK, April 6, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—On April 3, I received the following communication from G. W. Birdsall, Chief Engineer of the Croton Aqueduct:

April 3, 1891.

A. FTELEY, Esq., *Chief Engineer, Aqueduct Commission:*

DEAR SIR—After the 1st of May I would like to get to work on repairs to Old Aqueduct and connections, etc., to same, which would necessitate the shutting off of the water flowing through same and depending entirely upon the New Aqueduct.

Has anything developed that will necessitate the shutting off of the New Aqueduct for the next six months?

Respectfully, yours,

(Signed) G. W. BIRDSALL, Chief Engineer, Croton Aqueduct.

I saw Mr. Birdsall on the 4th instant, and stated that although I knew of no reason that would prevent him from using the New Aqueduct to convey the full water supply for the length of time mentioned, I would recommend that the New Aqueduct be emptied and examined before I send him an official answer.

Deputy Chief Engineer Rice is now instructed to make all preparations necessary for an examination of the Aqueduct.

I am, very respectfully,

A. FTELEY, Chief Engineer.

NEW YORK, April 7, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—If you approve my recommendation to empty and examine the Aqueduct (this week or at the beginning of the next), I shall most probably want to employ temporarily some laborers, possibly a few masons and other mechanics, and I would ask you to authorize me to do so and to procure the necessary tools and appliances.

The whole expenditure not to exceed one thousand dollars.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution:

Resolved, That the foregoing recommendation of the Chief Engineer be and the same is hereby approved, and he is hereby authorized to temporarily employ such laborers, mechanics and masons, and to procure the necessary tools and appliances as may be necessary for emptying and examining the New Aqueduct before repairs to the Old Aqueduct are commenced, at an expense not to exceed $1,000; and an appropriation of said amount is hereby made to cover the work in question.

The report was adopted by the following vote:

Affirmative—The Comptroller, and Commissioners Duane, Tucker, Scott and Cannon—5.

The Committee also presented the following communication, received from the Chief Engineer:

NEW YORK, April 6, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—The roofs of the "Best" house and out-buildings near the Main Dam at Carmel are now in a poor condition.

As these buildings will be our permanent headquarters for the entire period of construction, and will probably continue in use after the completion of the dam, repairs are imperatively necessary for their proper preservation.

Assistant Engineer Thompson has inquired for prices in the neighborhood and finds that the smallest amount for which he can have the work done is $185. I transmit herewith an offer of E. Fowler of Carmel to do the work for that price.

I recommend that Mr. Fowler be directed to do the work for that price. As the repairs of the roofs may develop a few weak places in connection with them, I would ask the Commission to authorize the Chief Engineer to spend a sum not exceeding $250 to cover the whole of the repairs.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution:

Resolved, That the foregoing recommendation of the Chief Engineer be and the same is hereby approved, and an appropriation of $250 is hereby made to cover the cost of repairs referred to in the foregoing communication.

The report was adopted by the following vote:

Affirmative—The Comptroller, and Commissioners Duane, Tucker, Scott and Cannon—5.

The Committee also presented the following communication, received from the Chief Engineer:

NEW YORK, April 7, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—You have referred to me two bills presented by Messrs. Washburn, Shaler & Washburn, on account of damage caused to their work at Titicus Dam by the floods of January 11 and 22, 1891; also the accompanying correspondence, with the request that I ascertain from those contractors on what terms they would waive all claims for damages on account of the said flood.

The following is a synopsis of the facts which led to the presentation of the above claims:

In the building of dams generally, and especially of such as are to be subject to a great pressure of water, it is essential that the work in all its parts is executed in the best possible conditions. The protection of the work from the stream is especially important and, inasmuch as the contractors, if

the cost of such protective work was thrown on them, might be inclined to make it inadequate, it was thought proper to stipulate that they should be paid under the terms of the contract for whatever protective work they should do, subject to the objections of the Engineer (see Clauses 29 and 30 of the contract).

The contractors proposed a plan of protective work which, in principle, was accepted by the Engineer, but they designed it of sufficient capacity to accommodate the most extensive freshets that could be expected to occur. The expense necessary to build such works for temporary purposes was, in my judgment, excessive; moreover, the size of the appliances proposed would have interfered with the proper conduct of the work.

In my answer to their proposition of June 8, 1890, I admit that the principle of the plan is acceptable, but I add the following remarks: "While agreeing with you on the fact that the maximum flow of the river may attain the figure determined by yourselves, I have to say, in accordance with Clause 30 of the contract, that the work which you propose to do is in my opinion unnecessary, and that I would not feel justified in including in the estimate the whole cost of the same.

"My reasons for making that statement are:

"First—That the most advisable manner of designing the work in this case is to provide amply for such a flow as is likely to take place after such rains or thaws as occur ordinarily, but not for exceptional conditions.

"Second—That in case of such exceptional conditions, which may obtain for brief periods in the year, the main work must be so arranged that it can be flooded without causing any serious damage, if any.

"Third—That the maintenance of such works as you propose would be much more costly to yourselves as the possible damage that might occur to the main work if it were properly arranged.

"Fourth—That the maintenance of the water-tight flume, 45 feet wide, over your work, would not only be much more costly to yourselves, but that it would embarrass your movements and prevent to a considerable extent the good execution of the work under and about it." And again, "In regard to your statement contained therein, that I have decided that 'to provide preventative works for a greater flow than 1,500 feet per second is not proper or necessary'; I have to refer you to my preceding remarks in which I expressed the opinion that, above a certain volume, the flow of the river is to be provided for by other means than the proposed canal and flume which, if they were made of the size originally proposed by yourselves, would be to you a source of increased expenditure and a serious impediment to your work during the subsequent operations of construction."

The conditions foreseen in the above communication obtained. Last January we had two freshets larger than had been experienced in that district for years; the flow was beyond the capacity of the works provided for diverting the river which resumed its former channel and caused some damage.

The contractors claim that if they had been allowed to follow their own plan no damage would have occurred; hence their claims for damages accompanied by the statement contained in their letter of January 27, 1891, that "we would wish to be understood also that in submitting a bill to you this day for damage and loss by water on the 11th of January, 1891, we in no sense waive our right to full recompense from the City of New York for such damage and loss as we do not now see, also such damage and loss as may result in the future ascribable to the action of the water on the 11th of January, 1891."

The whole question rests on the value of the verdict of the Engineer, that the work proposed by the contractors was unnecessarily large. The work, as authorized by me, is of ample size, considering the ordinary practice followed in the construction of public works; I admit, however, that there are risks to be run, and the contractors contend that the responsibility for such risks rests with the Aqueduct Commissioners.

The two bills presented by the contractors amount to $2,346. I estimate that the additional cost of the protective work, due to the larger size proposed by the contractors, would have been more than $16,000.

I had an interview with a member of the firm a few days ago, with the following result:

The contractors insist that, if allowed to follow their own plans, no damage would have occurred; they disclaim any intention to magnify their demands and allege that the delay caused by the floods and by the necessary repairs may have a serious result on the future conduct of their work.

They request that an extension of time for the completion of the dam be granted them from December 31, 1892, to July 1, 1893. In consideration of that extension and of a sum of $1,909.40 they would waive all claims for further damages on account of the floods of January 11 and 22, 1891.

They would also, if desired, agree that, in case a subsequent flowage of the work, due to the alleged insufficient size of the protective work, led to litigation, a settlement of the present claims, as indicated above, would not be used as a precedent to the prejudice of either party.

With proper maintenance of the protective work, and with the expected progress of the work of construction during the coming year, I believe that the probability of a recurrence of the overflow is small.

The extension of time requested by the contractors can be granted without prejudice to the City, inasmuch as during the completion of the upper parts of the dam water can be accumulated behind it in sufficient quantity.

Although I do not concur with the contractors in the items of damages submitted by them, or in their understanding of the responsibilities involved, I beg to say that, after due consideration of all the points in this case, it is my opinion that it would be for the interests of the City to settle it on the terms above mentioned.

Yours, respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution:

Resolved, That, upon the recommendation of the Chief Engineer, the sum of $1,909.40 is hereby allowed to contractors Washburn, Shaler & Washburn on account of damage done to their work at Titicus dam by the floods of January 11 and 22, 1891, providing said Washburn, Shaler & Washburn waive all claims for damage owing to the floods of said dates.

The Committee also recommended the adoption of the following preamble and resolution:

Whereas, A request has been made by Washburn, Shaler & Washburn, contractors, for an extension of time for the completion of the Titicus dam, near Purdy's Station, New York, from December 31, 1892, to July 1, 1893; and said Washburn, Shaler & Washburn having agreed that in consideration of being allowed said extension of time and being paid the sum of $1,909.40 for the damage done to their work by the floods of January 11 and 22, 1891, they will waive all claims for all further damages owing to the floods of said dates; and the Chief Engineer having recommended that said extension of time be allowed; therefore

Resolved, That, upon the recommendation of the Chief Engineer, the Aqueduct Commissioners hereby grant to Washburn, Shaler & Washburn, contractors, an extension of time to July 1, 1893, to complete the work above referred to, providing their bondsmen shall, within ten days from the date hereof, enter into stipulations continuing their obligations for and during the completion of said contract under said extension of time, which is hereby allowed to them as further time for the performance of said contract.

On motion of the Comptroller, the report and resolutions were laid on the table until the next meeting.

A communication was received from the Chief Engineer submitting a statement showing in detail his estimate for building the blow-off at Shaft No. 24, on Section No. 11 (a) of the New Croton Aqueduct, amounting to $24,480.00.

On motion of Commissioner Scott, the same was referred to the Construction or Executive Committee.

The Secretary presented the following:

CITY OF NEW YORK—FINANCE DEPARTMENT,
COMPTROLLER'S OFFICE,
April 7, 1891.

Mr. JOHN C. SHEEHAN, *Secretary, Aqueduct Commission:*

SIR—On March 13, 1891, the Commissioners of the Sinking Fund invested the sum of $150,000 in "Additional Water Stock," which amount was placed to the credit of said fund.

Respectfully,
RICHARD A. STORRS, Deputy Comptroller.

Which was ordered entered upon the books of the Commission and filed.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, April 22, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

On motion of Commissioner Cannon, the minutes of stated meetings of April 1 and 8, 1891, were ordered approved.

The Committee of Finance and Audit reported their examination and audit of bills contained in Vouchers Nos. 6872 to 6889, inclusive, amounting to $1,423.10; also of Vouchers Nos. 6891 to 6895, inclusive, amounting to $2,030.35, being estimates for work done by contractors; also of bills contained in Vouchers Nos. 6896 to 6911, inclusive, amounting to $575,97.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Committee also presented the following:

The Committee of Finance and Audit report:

That they have examined the bids and checks received April 8, 1891, for building the blow-off at Shaft No. 24, Section "A" of the New Croton Aqueduct.

The checks, amounting to $15,000, were correct and transmitted to the Comptroller, and his receipt is on file.

The bids were found correct as to their formality, and the sureties appear to be sufficient.

On motion of Commissioner Scott, the report was approved and ordered filed.

The Construction or Executive Committee presented the following communications received from the Chief Engineer, and recommended that the same be spread in full on the minutes and filed:

NEW YORK, April 14, 1891.

Schedule of the flow of water at Croton Dam into the New Aqueduct, as per request of Chief Engineer of the Croton Aqueduct:

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Since my last report the flow of water in the New Aqueduct was continued at the rate of 80,000,000 gallons per 24 hours. On the evening of the 12th inst., the gates at Croton Dam were gradually raised for the purpose of flushing the Aqueduct. At 5 P. M. of the 13th inst., the gates at Croton were closed. The examination of the Aqueduct will begin to-morrow.

A. FTELEY, Chief Engineer.

NEW YORK, April 21, 1891.

Schedule of the flow of water at Croton Dam into the New Aqueduct, as per request of Chief Engineer of the Croton Aqueduct :

Since my last report, dated the 14th inst., the gates at Croton Dam remained closed until 6 P. M. of the 18th inst., when they were again raised to admit of a flow of water of 84,000,000 gallons per 24 hours, which is the present rate of flow. The examination of the Aqueduct has shown it to be in a satisfactory condition.

A. FTELEY, Chief Engineer.

On motion of Commissioner Tucker, the recommendation was adopted.

The Committee also presented the following communication, received from the Chief Engineer :

NEW YORK, April 14, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—In pursuance of my verbal recommendation that iron doors be put up at the South Yonkers Gate-house in the place of wooden ones, I have asked bids from various firms.

From the Jackson Architectural Iron Works no bid has been received. Messrs. Edwards & Co. and the Jonson Foundry and Machine Co. decline to bid.

The bids received and the amounts bid are as follows :

1. The Riverside Bridge and Iron Works	$1,060 00
2. M. J. Drummond	970 00
3. Coldwell, Wilcox & Co	889 00
4. John Fox	825 00

I recommend that the work be awarded to John Fox, the lowest bidder. The original bids are herewith submitted.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, the contract for constructing iron doors at the South Yonkers Gate-house be and the same is hereby awarded to John Fox, at his bid of $825, it being the lowest bid received for doing said work.

The report was approved and the resolution adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott, and Cannon—4.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, the contract for building the blow-off at Shaft No. 24, on Section No. 11 (a) of the New Aqueduct, be and hereby is awarded to

J. M. Waddle, at his bid of $21,531.25, it being the lowest bid received, and less than the estimate of the Chief Engineer for doing said work.

The same was adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also recommended the adoption of the following resolution:

Resolved, That, upon the recommendation of the Chief Engineer, the accompanying bill of Mrs. P. M. Corlett, being for board for the topographical party recently on detached duty at Double Reservoir "I," amounting to $210, is hereby approved and ordered certified to the Comptroller for payment.

The same was adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also presented the following:

The Construction or Executive Committee present herewith six similar property maps, submitted by the Commissioner of Public Works on April 21, 1891, showing additional parcels of land to be acquired for the construction of Reservoir "D," on the West Branch of the Croton river, near Carmel, in Putnam County, New York, and recommend the adoption of the following resolution:

Resolved, That we hereby approve and adopt the above-described six similar property maps of said additional lands, marked "Exhibit No. 2, of 1891," and we direct that said maps be duly certified and transmitted to the Counsel to the Corporation for filing and delivery to the Commissioners of Appraisal, as provided by section 2 of chapter 490, of the Laws of 1883; and the said Counsel to the Corporation is hereby requested to take the necessary steps to amend the proceedings heretofore taken for the acquirement of lands for said reservoir so as to include the taking in fee of the above described additional parcels of land, as the same are shown upon the aforesaid property maps.

The report was approved and the resolution adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also presented the following communication received from the Chief Engineer:

NEW YORK, April 21, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—The following-named men were employed from April 16, 1891, to assist in emptying the Aqueduct. These men were employed by authority granted April 8, 1891:

James McCartney, Foreman, at $4.50 per day.
James Fletcher, Sr., Laborer, at $2 per day.
James McCormick, Laborer, at $2 per day.
J. L. McCartney, Laborer, at $2 per day.
James Sanders, Laborer, at $1.75 per day.
Harry Courtney, Laborer, at $1.50 per day.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution:

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...CORPORATION,

...Inc.

...the same to Mr. Carter for ...which might affect ...Arnould, contractors and the City, ...and the measures proposed thereby ...

...Superintendent of Human Rights, the contract ...became and earned out in ...

...has been ...

2d. That the Comptroller should be notified of the deficiency and requested to set off the amount thereof against any sum which may become due to the same contractor under other contracts.

I remain, yours respectfully,

WM. H. CLARK, Counsel to the Corporation.

On motion of Commissioner Scott, the same was ordered spread in full on the minutes and filed.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Special Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, April 29, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

In the absence of the Secretary, Auditor J. C. Lulley acted as Secretary pro tem.

The Committee of Finance and Audit reported their examination and audit of bills contained in Vouchers Nos. 6917 to 6933, inclusive, amounting to $4,063.84.

On motion of Commissioner Scott, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following report, received from the Chief Engineer, and recommended that the same be spread in full on the minutes and filed:

NEW YORK, April 28, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—In addition to my statement made last week, and in accordance with your request, I submit the following account of the recent examination of the New Aqueduct.

You may remember that the emptying of the Aqueduct was suggested to me by the proposed action of the Department of Public Works to stop the flow of water in the Old Aqueduct, as expressed in the following note of Chief Engineer Birdsall to myself:

April 3, 1891.

A. FTELEY, Esq., *Chief Engineer, Aqueduct Commission:*

DEAR SIR—After the 1st of May I would like to get to work on repairs to Old Aqueduct and connections, etc., to same which would necessitate the shutting off of the water flowing through same and depending entirely upon the New Aqueduct.

Has anything developed that will necessitate the shutting off of the New Aqueduct for the next six months?

Respectfully, yours,

(Signed) GEO. W. BIRDSALL, Chief Engineer.

Accordingly, on the 12th and 13th instants, the flow was increased for flushing purposes, and on the 14th the Aqueduct was emptied with the exception of the two siphons.

The whole of its length was examined with the result that at a few places a small amount of sand and gravel was found deposited in the gate-houses and at a few points on the line. It was removed from the gate-houses and from Section 6, near Shaft 12C. In other parts the amount of sand was too small to justify the time and expense necessary for its removal.

Two of the 48-inch stop-cock gates at Shaft 25 were found somewhat injured owing to a misplacement of parts during construction. They will have to be modified and replaced. This work can be done mostly by the foreman and machinists employed by the Aqueduct Commissioners, with an additional laborer.

With these exceptions the New Aqueduct has been found in excellent order. It remained open five days, and the flow was resumed on the 18th instant.

After refilling, the shafts under pressure were found as before, Shaft 25 showing a slight leakage, as heretofore recorded.

The cost of examination and of cleaning, outside of the pay of the regular employees, will be under $75. In this amount is not included the cost of placing an iron grating at the bottom of Shaft 11A, which properly belongs to construction.

The New Aqueduct being in excellent condition and ready for continuous service, I have answered as follows the note of Chief Engineer Birdsall:

NEW YORK, April 25, 1891.

GEO. W. BIRDSALL, Esq., *Chief Engineer, Croton Aqueduct:*

DEAR SIR—In answer to your note of April 3, and in confirmation of my verbal statement made to you the following day in regard to it, I have to say that the New Aqueduct is in good working order and can be used continuously for the whole supply for the next six months or more.

I am, respectfully,

(Signed) A. FTELEY, Chief Engineer.

I am, very respectfully,

A. FTELEY, Chief Engineer.

On motion of Commissioner Scott, the recommendation was approved, and the Secretary directed to transmit a copy of said report to the Commissioner of Public Works.

The Committee also presented the following report, received from the Chief Engineer, and recommended that the same be spread in full on the minutes and filed:

NEW YORK, April 28, 1891.

Schedule of the flow of water at Croton Dam into the New Aqueduct, as per request of Chief Engineer of the Croton Aqueduct:

Since my last report, dated the 12th inst., the flow of water has continued at the rate of 84,000,000 gallons per twenty-four hours. Order was sent last night to decrease the flow to 74,000,000 gallons per twenty-four hours.

A. FTELEY, Chief Engineer.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also recommended the adoption of the following resolution:

Resolved, That the action of the Chief Engineer in suspending William W. Bullis, Journeyman Machinist at Shaft No. 25 of the New Aqueduct, on the 27th instant, for cause, be and hereby is approved; and said Bullis is hereby discharged from the service of the Aqueduct Commissioners.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That the action of the Chief Engineer in temporarily employing Michael Cusick as a Laborer at $2 per day, for work around the office of Division Engineer Craven at Carmel, said employment commencing on the 24th instant, be and hereby is approved.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That the action of the Chief Engineer in temporarily employing Thomas Foley as a Laborer under Division Engineer Craven, at South Yonkers, for work in connection with the examination of the New Aqueduct, and for other purposes, said employment beginning on the 22d instant, be and hereby is approved.

On motion of Commissioner Tucker, the same was adopted.

The Committee also presented the following communication, received from the Chief Engineer :

NEW YORK, April 28, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—On April 17, 1889, an appropriation of $500 was made for the purpose of procuring lithographic prints of the maps of the Croton water-shed, made by W. E. Worthen, C. E. Of this appropriation the sum of $280 has been expended for such maps, and the edition has been exhausted.

As there is a great demand for copies of the reduced size, I have caused a tracing to be made of the same, which can be photo-lithographed and printed in colors at an expense not exceeding $135 for two hundred copies.

This is to ask you for authority to expend that sum of money for such purpose out of the balance of the appropriation of April 17, 1889.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution :

Resolved, That an appropriation of one hundred and thirty-five dollars is hereby made to cover the cost of photo-lithographing and printing two hundred copies of the maps of the Croton water-shed, made by W. E. Worthen, C.E., as set forth in the foregoing communication.

The report was approved and the resolution adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also recommended the adoption of the following resolution :

Resolved, That the Chief Engineer be and hereby is authorized and directed to produce fifty lithographic copies of the contract drawings of the record and storage building to be constructed at One Hundred and Thirty-fifth street and Convent avenue.

On motion of Commissioner Cannon, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That the accompanying bill of Wilson Brothers for making models of the New Aqueduct, amounting to six hundred and seventy-one dollars and ninety-five cents, be and hereby

is approved, and ordered certified to the Comptroller for payment; and an appropriation of said amount is hereby made to cover the cost thereof.

The same was adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also presented the resignation of Gaylord Thompson, Assistant Engineer, and recommended that the same be be accepted, to take effect on May 1, 1891.

On motion of Commissioner Tucker, the same was accepted.

The Committee also presented the following:

The Construction or Executive Committee report:

That at a meeting of the Aqueduct Commissioners, held on October 8, 1890, the following preamble and resolution, submitted by the Committee on Construction, was considered by the Commissioners:

"Whereas, The Chief Engineer has certified under date of September 10, 1890, that Heman Clark has completely performed and carried out the provisions of the contract made by him with this Commission, dated December 18, 1884, for constructing Section A of the New Aqueduct, and has stated from actual measurements the whole amount of work done and materials furnished under and according to the terms of said contract, and of the true value thereof; now, therefore, be it

"Resolved, That the Aqueduct Commissioners do accept the work done and materials furnished by Heman Clark under the contract made by him with this Commission on the 18th day of December, 1884, for constructing Section A of the New Aqueduct, and that a proper voucher for the final payment for work done and materials furnished under said agreement be approved by the Aqueduct Commissioners, and certified to the Comptroller for payment; and said Comptroller is hereby notified that the cost of superintending the repairs of defective work on said section amounts to nineteen thousand one hundred and seventy-nine dollars and eighteen cents, and he is hereby requested to take such action as may be necessary to protect the interests of the City owing to the deficit which appears in said final estimate."

The preamble and resolution and the subject-matter thereof were finally referred to the Counsel to the Corporation, with request to advise the Commissioners, first, whether in view of the fact that there is a deficiency on said section, the Commissioners should refuse to accept the same; second, whether, in case any other final estimate shall become due to the contractor for said section, the Commissioners have the right to deduct the amount of the deficiency on this estimate from the amount due on such other final estimate; and the Counsel to the Corporation, under date of April 21, 1891, having advised, first, that the work should be accepted; and, second, that the Comptroller should be notified of the deficiency, and requested to set off the amount thereof against any sum which may become due to the same contractor under other contracts, we recommend the adoption of the following resolution:

Resolved, That the Aqueduct Commissioners do accept the work done and materials furnished by Heman Clark, under the contract made by him with this Commission on the 18th day of December, 1884, for constructing Section A, of the New Aqueduct, and that a proper voucher for the final

payment for work done and materials furnished under said agreement be approved by the Aqueduct Commissioners and certified to the Comptroller for payment; and said Comptroller is hereby notified that the cost of superintending the repairs of defective work on said section amounts to nineteen thousand one hundred and seventy-nine dollars and eighteen cents; and he is hereby requested to set off a sum sufficient to make good the amount of said deficiency against any sum which may become due to Heman Clark, under his contract for the construction of Section B, of the New Aqueduct, in accordance with said opinion.

On motion of Commissioner Scott, the report was approved and the resolution adopted.

On motion of Commissioner Cannon, the resolution adopted on March 19, 1891, appropriating $750 to cover the cost of preparing models of Section 6 of the New Aqueduct, was reconsidered.

The Commissioners then adjourned.

J. C. LULLEY, Secretary pro tem.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, May 6, 1891, at 3 o'clock P. M.

Present—The Comptroller, and Commissioners Duane, Tucker, Scott and Cannon.

On motion of Commissioner Scott, the minutes of stated meeting of April 22, 1891, were ordered approved.

The Committee of Finance and Audit reported their examination and audit of Voucher No. 6935, being final estimate for work done on Section A of the New Aqueduct, amounting to $742.28; also of bills contained in Vouchers Nos. 6936 to 6950, inclusive, amounting to $980.60.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following communication, received from the Deputy Chief Engineer, and recommended that the same be spread in full on the minutes and filed:

NEW YORK, May 4, 1891.

Schedule of the flow at Croton Dam into the New Aqueduct, as per request of the Chief Engineer of the Croton Aqueduct:

At 9 A.M. of April 28, the flow of water was decreased from 84,000,000 to 74,000,000 gallons per twenty-four hours, and this latter rate was maintained until 10 A.M. of the 3d instant, when the flow was increased to 84,000,000 gallons per twenty-four hours.

GEORGE S. RICE, Deputy Chief Engineer.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also recommended the adoption of the following resolution:

Resolved, That the action of the Deputy Chief Engineer in temporarily employing Daniel Manning, as a laborer at Shaft No. 25 of the New Aqueduct, at two dollars per day, said employment commencing on April 30, 1891, be and hereby is approved.

On motion of Commissioner Scott, the same was adopted.

The Committee also presented forms of contract, specifications and bond, received from the Commissioner of Public Works on May 6, 1891, to provide for building the record and storage building, and for grading, improving and fencing the grounds, near the One Hundred and Thirty-fifth Street Gate-house of the New Croton Aqueduct, and recommended the adoption of the following resolutions :

Resolved, That the forms of contract, specifications and bond, submitted by the Commissioner of Public Works on May 6, 1891, and approved by the Counsel to the Corporation "as to form," for building the record and storage building, and for grading, improving and fencing the grounds, near the One Hundred and Thirty-fifth Street Gate-house of the New Croton Aqueduct, be and the same are hereby approved and adopted; and the Secretary is hereby directed to have triplicate copies thereof prepared for certification by the Aqueduct Commissioners, and filed in accordance with section 25, chapter 490, Laws of 1883.

Resolved, That the President and Secretary be and they are hereby directed to advertise in the CITY RECORD, New York "Recorder" and the New York "Daily News" a notice and advertisement inviting sealed bids or proposals for building the record and storage building, and for grading, improving and fencing the grounds, near the One Hundred and Thirty-fifth Street Gate-house of the New Croton Aqueduct, as provided in the contract and specifications this day approved and adopted by the Aqueduct Commissioners.

The same were adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

Negative—The Comptroller—1.

The Committee also presented forms of contract, specifications and bond, received from the Commissioner of Public Works on May 6, 1891, to provide for building the head-house and engine-room superstructure, etc., at Shaft No. 25, on Section No. 12 of the New Croton Aqueduct, and recommended the adoption of the following resolutions :

Resolved, That the forms of contract, specifications and bond, submitted by the Commissioner of Public Works on May 6, 1891, and approved by the Counsel to the Corporation "as to form," for building the head-house and engine-room superstructure, etc., at Shaft No. 25, on Section No. 12 of the New Croton Aqueduct, be and the same are hereby approved and adopted; and the Secretary is hereby directed to have triplicate copies thereof prepared for certification by the Aqueduct Commissioners, and filed in accordance with section 25, chapter 490, Laws of 1883.

Resolved, That the President and Secretary be and they are hereby directed to advertise in the CITY RECORD, New York "World" and "Commercial Advertiser" a notice and advertisement inviting sealed bids or proposals for building the head-house and engine-room superstructure, etc., at Shaft No. 25, on Section No. 12 of the New Croton Aqueduct, as provided in the contract and specifications this day approved and adopted by the Aqueduct Commissioners.

The same were adopted by the following vote :

Affirmative—The Comptroller, and Commissioners Duane, Tucker, Scott and Cannon—5.

The Committee also presented the following opinion, received from the Counsel to the Corporation, and recommended that the same be spread in full on the minutes :

LAW DEPARTMENT,
OFFICE OF THE COUNSEL TO THE CORPORATION,
NEW YORK, May 4, 1891.

Hon. THEODORE W. MYERS, *Comptroller :*

SIR—I have received your letter of the 20th instant, calling my attention to the claim of Washburn, Shaler & Washburn against the Aqueduct Commissioners, on account of alleged damage done to their work at Titicus Dam by the floods of January 11 and 22, 1891, which is now before the Aqueduct Commissioners upon a report of the Construction Committee in favor of paying the sum of $1,909 40 in consideration of the waiver by the contractor of all claims for further damage on account of said floods.

The facts, as appear by the report, in relation to said claim made by Chief Engineer Fteley, presented to the Aqueduct Commissioners April 8, 1891, are as follows, namely :

1. The contractors having undertaken the construction of the dam in question, proposed a plan of protective work of a certain size and capacity.

2. The Engineer accepted the principle of the proposed protective work, but decided that the proposed size of the appliances which the contractors proposed to build was necessarily large, and the cost excessive ; also that the size of the appliances proposed would interfere with the proper conduct of the work of constructing the dam.

3. The contractors, therefore, constructed said protective work and appliances upon a smaller scale.

4. Severe freshets occurred on the 11th of January and the 22d of January, 1891, and the protective work proved to be inadequate to save the dam from harm.

5. Damages were occasioned by such freshets which are estimated by the contractor to amount to $2,346.

6. The contractors claim that if the protective work had been built of the size and capacity first proposed by them, such damage would not have occurred.

7. The contractors, therefore, claim that they should be paid such damage, and the Chief Engineer states that it is his opinion that it would be for the interests of the City to settle the claim for the sum of $1,909.40.

The contract provides, section 29, "The contractor shall erect all necessary structures, and do all work needed to protect his work from water ; he shall erect all temporary dams, coffer dams, sheet piling and other devices, take care of the river and of the water accumulated behind the temporary dam or dams or other structures, and shall be responsible for all damage that may be caused by the action of water, whether from negligence or any other cause. Such damage is to be repaired, and the work must be restored and maintained at his cost."

"Section 30. All * * * work, temporary or permanent, for the purpose of protecting the work from the river, provided that they are not objected to by the engineer as improper or unnecessary, are to paid for at the price stipulated in this contract."

By these covenants the contractor has undertaken absolutely to protect his work from the water ; to erect all necessary structures and devices to accomplish that object, and to bear all damage that may be caused by the action of the water.

The force of this covenant is such that the contractor was at liberty to erect the protective structure of as great size as in his judgment was necessary, and the objection of the engineer could not prevent him from making the protective devices of such size as in his judgment was necessary.

The contractor undertook all responsibility for damage to his work caused by water, and will not now be permitted to recover such damage from the City.

The provisons of section 30, above quoted, avail only to protect the City from any claim for the expense of constructing protective work except to the amount approved by the Engineer.

The result of the covenants taken together is that,

1st. The contractor was at liberty to construct just such protective work as he deemed necessary to construct to accomplish his undertaking, to preserve the work upon the dam from injury.

2d. The contractor, however, could be paid only for so much work as was approved by the Engineer.

The Engineer was the arbiter selected to determine what amount of protective work was proper and necessary and therefore to be paid for.

The contractor, however, was at liberty to build, at his own expense, as much more as he deemed necessary.

It follows from these considerations that the contractor has taken upon himself the risk of damage and has no legal claim to recover the same from the City.

I remain, yours respectfully,

(Signed) WM. H. CLARK, Counsel to the Corporation.

On motion of Commissioner Scott, the report and resolutions, presented by the Committee on April 8, 1891, providing for the payment of the sum of $1,909.40 to contractors Washburn, Shaler & Washburn on account of damage done to their work at Titicus Dam by the floods of January 11, and 22, 1891, and laid on the table, were taken from the table and referred back to said Committee, together with the foregoing opinion received from the Counsel to the Corporation.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, May 13, 1891, at 3 o'clock P. M.

Present—The Comptroller, and Commissioners Duane, Tucker, Scott and Cannon.

On motion of Commissioner Scott, the minutes of stated meeting of April 29, 1891, were ordered approved as printed.

The minutes of stated meeting of May 6, 1891, were read and approved; the Comptroller voting in the negative.

The Committee of Finance and Audit reported their examination and audit of Vouchers Nos. 6952 to 6955, inclusive, being estimates for work done by contractors, amounting to $23,838.90; also of bills contained in Vouchers Nos. 6956 to 6969, inclusive, amounting to $494.01; also of Vouchers Nos. 6971 and 6972, being estimates for work done by contractors, amounting to $3,698.55.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following communication, received from the Chief Engineer, and recommended that the same be spread in full on the minutes and filed.

NEW YORK, May 12, 1891.

Schedule of the flow at Croton Dam into the New Aqueduct, as per request of the Chief Engineer of the Croton Aqueduct.

Since the last weekly report the flow of water has continued at the rate of 84,000,000 gallons per 24 hours.

A. FTELEY, Chief Engineer.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also recommended the adoption of the following resolution :

Resolved, That the action of the Chief Engineer in employing Richard B. Philbin, on the 9th instant, as Journeyman Machinist at Shaft No. 25 of the New Aqueduct, at three dollars per day, in place of W. W. Bullis, discharged, be and hereby is approved.

On motion of Commissioner Tucker, the same was adopted.

The Committee also presented the following communication, received from the Chief Engineer :

NEW YORK, May 12, 1891.

To the Honorable the Aqueduct Commissioners :

GENTLEMEN—I herewith return with my report a letter of Messrs. O'Brien & Clark to the Aqueduct Commissioners in which they decline to proceed with the completion of Shaft 21, on Section "B" of the New Aqueduct, which was referred to me.

This letter, I presume, although signed by O'Brien and Clark, was intended as an answer to the following communication which I sent on April 21, to Mr. Heman Clark, contractor for Section "B."

(Dictated.) NEW YORK, April 21, 1891.

HEMAN CLARK, Esq., *Contractor for Section "B":*

DEAR SIR—Inasmuch as work has not been resumed at Shaft 21 this spring, I asked your Mr. O'Brien to-day in regard to it, and he states that it is not your intention to proceed with the balance of the work on Section "B." If such is the case, please let me know of it, so that I may ask the Aqueduct Commissioners to take such action as they may find advisable in the premises.

I am, respectfully,
(Signed) A. FTELEY, Chief Engineer.

I take exception to the statement made in Messrs. O'Brien & Clark's communication, that the changes introduced in the form of the shaft are such that it cannot be built under the stipulations of the contract.

As to the interference caused by the presence of the water, it is due to the fact that the contractor had failed to complete the work in November, 1888, at the expiration of the last extension of time granted by the Aqueduct Commissioners.

The work at Shaft 21, which was irregularly prosecuted in 1890, could have been easily finished before the end of the season ; but it was suspended several times without necessity.

I fail to understand the reference of the contractor to "previous promises" made by the Aqueduct Commissioners.

As it is advisable not to delay any longer, I have to certify, under clause P of the contract, that in my opinion the work remaining to be done on Section "B," of the New Aqueduct, is unnecessarily and unreasonably delayed, with request that the Commissioners take such action as will forward its completion.

The amount of work remaining to be done on Section "B" is, under the terms of the contract, below $2,500.

The communication of April 28, from Messrs. O'Brien & Clark is herewith returned.

I am, very respectfully,
A. FTELEY, Chief Engineer.

—and recommended the adoption of the following preambles and resolution :

Whereas, The Chief Engineer has certified to this Commission, under date of May 12, 1891, that Heman Clark, contractor for the construction of Section 10B of the New Aqueduct, has unnecessarily and unreasonably delayed the completion of that part of the work on said section which

consists of the building and completion of Shaft 21, and of the final clearing of the ground around said shaft; and has abandoned the same, and refused to complete said work; and

Whereas, The contract for the construction of said Section 10B (Clause P) provides that if the work on said section, or any part thereof, is unnecessarily and unreasonably delayed, the Aqueduct Commissioners shall have power to notify the contractor for said section to discontinue all work, or any part thereof, under said contract, and that thereupon said contractor shall discontinue all work or such parts thereof as said Commissioners may designate; and said Commissioners shall thereupon have power to place such and so many persons, and to obtain by purchase or hire such materials, animals, carts, wagons, implements and tools, by contract or otherwise, as said Commissioners deem it necessary to complete the work on said section; therefore

Resolved, That Heman Clark, contractor for the construction of Section 10B of the New Aqueduct, be and he is hereby required to show cause at a meeting of the Aqueduct Commissioners, to be held at their office on the 20th day of May, 1891, at 3 o'clock P. M., why the further work of construction of that part of Section 10B of the New Aqueduct, which consists of the building and completion of Shaft 21, and of the final clearing of the ground around said shaft, should not be discontinued, owing to the fact that the work is unnecessarily and unreasonably delayed, and for his failure to comply with the directions and orders of the Chief Engineer, and the further completion of said section done under the direction and supervision of the Aqueduct Commissioners, as provided in Clause P of the contract for the construction of said section.

The report was approved and the preambles and resolution adopted by the following vote:

Affirmative—The Comptroller, and Commissioners Duane, Tucker, Scott and Cannon—5.

By the Comptroller—

Whereas, the Comptroller has submitted to the Counsel to the Corporation for his opinion the question as to the power of the Aqueduct Commissioners, under the provisions of chapter 490, Laws of 1883, to construct or contract for the construction of a record and storage building near the One Hundred and Thirty-fifth Street Gatehouse; therefore

Resolved, That pending the receipt of said opinion from Counsel to the Corporation, no further steps be taken in connection with the advertising for bids, or the opening of bids, or making of contract for said work.

On motion of Commissioner Scott, the same were laid on the table; the Comptroller voting in the negative.

On motion of the Comptroller, the following communication was ordered spread in full on the minutes and filed:

CITY OF NEW YORK—FINANCE DEPARTMENT,
COMPTROLLER'S OFFICE,
May 11, 1891.

Gen. J. C. DUANE, *President, Aqueduct Commission:*

SIR—In view of the fact that at a meeting of the Aqueduct Commissioners, held May 6, 1891, a resolution approving forms of contract, etc., for the construction of a storage and record building, and for grading, improving and fencing the grounds near the One Hundred and Thirty-fifth Street

Gatehouse, and directing the President and Secretary of the Commissioners to advertise for bids for said work, was presented ; and, notwithstanding the request of the Comptroller that said resolution should be laid over for further consideration, said resolution was adopted, the Comptroller protesting against the same ; and in view of the further fact that said protest of the Comptroller, although made at the time in open meeting, has not (under the instructions of the Commissioners) been allowed to appear in the minutes of said meeting, I desire to formally and officially protest against the adoption of said resolution and any further steps towards the construction of said building, for the following reasons, viz. :

1. The Aqueduct Commissioners have no legal power or authority to order, direct or advertise for the construction of such a building as that contemplated by the said resolution. The power of the Aqueduct Commissioners can be derived only from chapter 490, Laws 1883, and nowhere in said act is any such authority conferred as that assumed in the resolution in the question.

2. No urgent necessity exists for the construction of said building any greater than exists for the construction of a building for the storage of records of the various departments of the City Government as valuable as those of the Aqueduct Commissioners.

3. The expenditure of $40,000 for such a building, etc., would be an unnecessary waste of public moneys and an unjustifiable extravagance, especially in view of the fact that the Legislature has already enacted a law providing for the erection of a Municipal Building in which such records could be stored, and that until the completion of such building, or until the work of the Aqueduct Commissioners shall be completed and the Department of Public Works shall assume control of the New Aqueduct and the other works now under the supervision of the Aqueduct Commissioners, the premises already occupied by the Aqueduct Commissioners afford ample room for the storage of all the records of the said Commissioners, without any additional expense to the City beyond the rentals which will be paid for premises to be occupied by said Commissioners until the completion of their work under the terms of said act.

Even if the use of a fire-proof building for such records should be deemed essential, a portion of the building now in course of erection by the City at One Hundred and Twenty-first street and Sylvan place could, when completed, be used for the purpose stated until the completion of the new Municipal Building.

4. One of the main objects of chapter 299, Laws 1890, is to provide for the erection of a fire-proof building to hold such records as may, by direction of the Commissioners appointed by said act, be contained therein, and in the enumeration of those whose offices, etc., may be included therein, special provision is made for all such bureaus, offices and commissions as do not belong to any department, etc. It will thus be seen that the Municipal Building was intended to and will obviate the necessity of any other building for the storage of records, and that the erection of the same is expressly provided for by legislative act.

I must, therefore, respectfully reiterate my protest against the action of May 6, 1891, as extravagant, unlawful, because unauthorized by chapter 490, Laws 1883, and entirely unnecessary, because the Legislature has made other and ample provision for the care of public records of the Aqueduct Commissioners.

Respectfully,

THEO. W. MYERS, Comptroller.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, May 20, 1891, at 3 o'clock, P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

The Committee of Finance and Audit reported their examination and audit of vouchers Nos. 6973 and 6974, being estimates for work done by contractors, amounting to $2,539.80; also of bills contained in vouchers Nos. 6975 to 6993, inclusive, amounting to $1,963.13.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following communication, received from the Chief Engineer, and recommended that the same be spread in full on the minutes and filed:

NEW YORK, May 19, 1891.

Schedule of the flow at Croton Dam into New Aqueduct, as per request of the Chief Engineer of the Croton Aqueduct.

Since the last weekly report the flow of water has continued at the rate of 84,000,000 gallons per 24 hours.

A. FTELEY, Chief Engineer.

On motion of Commissioner Cannon, the recommendation was approved.

The Committee also recommended the adoption of the following resolution:

Resolved, That, upon the recommendation of the Chief Engineer, the accompanying bills of O'Brien & Clark, contractors, be and hereby are approved, viz:

Bill for $78.72, being for work done and materials furnished in restoring the paths in Central Park that were torn up during the construction of Section 16 of the New Aqueduct.

Bill for $18, being for moving furniture, etc., from High Bridge field office to No. 324 St. Nicholas avenue, and from field office at One Hundred and Tenth street to One Hundred and Thirty-fifth street Gate House.

The same was adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also presented agreements executed by Francis Larkin, of the Town of Ossining, and Thomas J. Bushell, of the Town of Yorktown, giving the City of New York the right to purchase certain lands at Croton Dam which are required for highway purposes, and recommended the adoption of the following resolution :

Resolved, That the agreements above mentioned be and hereby are approved, and ordered transmitted to the Board of Estimate and Apportionment for consideration and approval by said Board.

On motion of Commissioner Tucker, the report was approved and the resolution adopted.

The Committee also recommended the adoption of the following preambles and resolution :

Whereas, At a meeting of the Aqueduct Commissioners, held on May 13, 1891, the following preambles and resolution were adopted :

"Whereas, The Chief Engineer has certified to this Commission, under date of May 12, 1891, that Heman Clark, contractor for the construction of Section 10B of the New Aqueduct, has unnecessarily and unreasonably delayed the completion of that part of the work on said section, which consists of the building and completion of Shaft 21, and of the final clearing of the ground around said shaft, and has abandoned the same, and refused to complete said work ; and

"Whereas, The contract for the construction of said Section 10B (Clause P) provides that if the work on said section, or any part thereof, is unnecessarily and unreasonably delayed, the Aqueduct Commissioners shall have power to notify the contractor for said section to discontinue all work, or any part thereof, under said contract, and that, thereupon, said contractor shall discontinue all work, or such parts thereof, as said Commissioners may designate ; and said Commissioners shall, thereupon, have power to place such and so many persons, and to obtain by purchase or hire such materials, animals, carts, wagons, implements and tools, by contract or otherwise, as said Commissioners deem it necessary to complete the work on said section ; therefore,

"Resolved, That Heman Clark, contractor for the construction of Section 10B of the New Aqueduct, be and he is hereby required to show cause, at a meeting of the Aqueduct Commissioners, to be held at their office on the 20th day of May, 1891, at 3 o'clock P. M., why the further work of construction of that part of Section 10B of the New Aqueduct, which consists of the building and completion of Shaft 21, and of the final clearing of the ground around said shaft should not be discontinued owing to the fact that the work is unnecessarily and unreasonably delayed, and for his failure to comply with the directions and orders of the Chief Engineer, and the further completion of said section done under the direction and supervision of the Aqueduct Commissioners, as provided in Clause P of the contract for the construction of said section."

And Whereas, A copy of said preambles and resolution were served upon the above-named Heman Clark, and the said Heman Clark having appeared in person and by attorney this day before the Construction or Executive Committee of the Aqueduct Commissioners, and the statements made by them concerning the completion of said work not being satisfactory to the Aqueduct Commissioners,

Resolved, That that part of the construction of Section 10B of the New Aqueduct which consists of the building and completion of Shaft No. 21, and of the final clearing of the ground around said

shaft, be discontinued by the contractor, Heman Clark, owing to the fact that the work of completion of said shaft is unnecessarily and unreasonably delayed, and for his failure to comply with the directions and orders of the Chief Engineer, and that the further completion of said shaft be done under the direction and supervision of the Aqueduct Commissioners, as provided in Clause P of the contract for the construction of said Section 10B; and the Chief Engineer is hereby directed to prepare and submit to this Commission plans, specifications and contract to provide for the completion of said work.

The same were adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Comptroller, under date of April 30, 1891, gave notice of the issue of warrants for the payment of vouchers not certified to by the Aqueduct Commissioners, for

Reservoir "M"	$10,355 56
Westchester County Section	595 08
Reservoir "D"	300 45

—leaving a balance to the credit of Additional Water Fund of $77,189.11.

Which were ordered entered upon the books of the Commission and filed.

On motion of Commissioner Scott, the minutes of stated meeting of May 13, 1891, were ordered approved.

Commissioner Scott then moved that when the Commissioners adjourn, they adjourn to meet on Monday next, the 25th instant, at 3 o'clock P. M. Carried.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Adjourned Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Monday, May 25, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

The Construction or Executive Committee presented the following:

The Construction or Executive Committee report:

That at a meeting of said Committee held this day, the following resolution was adopted, and they now ask your approval of their said action:

Resolved, That the bid-box be closed, and the keys given to the President, and that the Secretary, John C. Sheehan, be authorized by this Commission to receive the bids for building the record and storage building; also for grading, improving and fencing the grounds, near the One Hundred and Thirty-fifth Street Gate-house of the New Croton Aqueduct; also for building the head-house and engine-room superstructure, etc., at Shaft No. 25, on Section No. 12 of the New Aqueduct, as called for in the approved forms of contract and specifications on file in the office of the Aqueduct Commissioners; also to receive the checks of the bidders, and to make the necessary preparations for opening the bids received for doing said work under the law.

On motion of Commissioner Scott, the report was approved and adopted.

The Committee also presented the following:

The Committee on Construction presents herewith a copy of an opinion furnished to the Comptroller by the Counsel to the Corporation deciding that the Aqueduct Commission have no power to proceed with the construction of the building projected to be erected on land now belonging to the City, and adjacent to the One Hundred and Thirty-fifth Street Gate-house.

The Counsel to the Corporation is the legally constituted Counsel to this Board, and your Committee, while regretting, for public reasons, the conclusion at which he has arrived, advise the Commission to respect and abide by his advice.

Your Committee might well stop here, and would do so were it not for the fact that the purpose and probable cost of this projected building has been publicly and constantly exaggerated. In view

of this fact, however, your Committee deems it proper to make an official statement upon the subject.

The question of erecting such a storage building has been under constant consideration by the Construction Committee (composed of all the members of the Commission) for many months. The preliminary and final plans have been again and again laid before and discussed by the Committee, and never until the advertisement was directed to be begun has any member of the Commission or any other person suggested that such a building was either unnecessary or unauthorized. On the contrary, a majority of the Commission, as well as the engineers both of the Commission and of the Department of Public Works, have been convinced of its utility and necessity.

The maps, plans and records of the Aqueduct have been most carefully and elaborately made at the cost of many thousands of dollars.

The New Aqueduct has been built not for to-day, nor for this year, nor even for this generation, but for all time. It is an extremely complex and complicated structure, being fitted with all the devices known to modern engineering science for regulating and controlling the flow of large bodies of water, including gates, stop-cocks, blow-offs, siphons, pumps and a number of other special contrivances, many of them of peculiar construction, devised and made for the special use of this particular aqueduct, and unlike any others known to be in use elsewhere.

The Aqueduct itself is built at an average depth of nearly one hundred and fifty feet below the surface of the ground.

Within a comparatively few years the City of New York will be almost wholly dependent upon this Aqueduct, and its health and material prosperity will depend in large measure upon the certainty that an uninterrupted and continuous daily supply of water can be received. As the population of the city increases so will the consumption of water, and as the daily consumption of water increases the quantity which can be stored in the Central Park Reservoir will represent fewer and fewer days' supply. Hence the larger the city grows the less safe will it be to run any risks of a long-continued stoppage of the Aqueduct.

The Aqueduct has successfully stood the practical test of nearly a year's constant use, and your Committee are well satisfied that no repairs of any consequence will be required in the near future. But as no human creation is perfect or indestructible, it is not unreasonable to assume that at some time it will become necessary to repair the Aqueduct.

Foreseeing this contingency, the Aqueduct Commission have from the very beginning of the work caused to be made careful and accurate maps, plans, profiles and cross-sections of the Aqueduct, and of the tunnel in which it is built, and also elaborate diagrams and plans showing the form, material, construction and position of the numerous gates, stop-cocks and other appliances used in the Aqueduct.

One purpose sought to be attained by means of all these records and documents was that, if in the future an accident should happen to the Aqueduct or to any of its appliances, the persons then charged with its maintenance might, before shutting off the water, learn exactly what condition of affairs they might expect, and thus make in advance all necessary preparations for repairing the damage in the least possible time, and with the least possible interruption of the flow.

The point selected for the record-house was the best that could be found. The One Hundred and Thirty-fifth Street Gate-house is the key to the distribution of water in the city. Both aqueducts run into it, and from it the water is conducted by a system of large pipes, some of which connect with the Central Park Reservoir, and some directly with the city service. Into it also runs the telephone line recently constructed along the Aqueduct. Thus if an accident occurred anywhere between the city and Croton Lake an engineer at the record-house could converse with another at the point of injury, and without the loss of a moment of time describe just what was to be found at the point indicated, what the character of the injury was likely to be, and what would be the best means to make the necessary repairs.

To store these valuable records in a cellar on Third avenue, or even so far away as in the New Municipal Building which it is proposed some day to erect, would, in the opinion of your Committee, be to rob them of the greater part of their usefulness and value.

The probable cost of the proposed building has been over-stated. In the opinion of your Committee, and according to the estimates of the engineers, its cost would fall below $20,000. The interest on this sum will not exceed $600 per annum, a sum much less than the annual rental of a proper place to store this great accumulation of documents. It will always be necessary to keep a competent man on duty at all hours at the One Hundred and Thirty-fifth Street Gate-house, and he could, without extra expense to the City, act as custodian of the record-house, thus saving the cost of a watchman, whose salary will amount to much more than the interest charge in the cost of the proposed building.

Your Committee, therefore, regret, for reasons both of economy and prudence, that the proposed structure does not, in the opinion of the Counsel to the Corporation, fall within the statutory powers of the Commission.

Your Committee has not failed to consider the question of their power in the premises before recommending the erection of the building, although, as has been said, no question on that point was raised by any one during the many months it has been under consideration.

The duty imposed upon the Commission is to provide new reservoirs, dams and a new aqueduct with the appurtenances necessary for their proper construction, opearation and maintenance. It was considered by your Committee that among the appurtenances properly to be constructed for the maintenance of the Aqueduct, was some perfectly safe and convenient place where the records of the Commission could be permanently kept, ready for instant and immediate use in case of necessity. For, as the Committee reasoned, the maintenance of the Aqueduct involved keeping it in repair, and by means of speedy repair keeping it in constant use, and anything that fairly contributed to that purpose seemed to fall within the spirit and letter of the Aqueduct Act.

This view, however, has not prevailed, and the Commission has no choice left except to cease any further steps towards erecting the building.

Your Committee, therefore, recommend the adoption of the following preamble and resolution:

Whereas, The Counsel to the Corporation has advised the Comptroller that the Aqueduct Commissioners have no power to enter into a contract for the proposed record-house at One Hundred and Thirty-fifth street;

Resolved, That all bids received for said work under the advertisement authorized by resolution of this Board on May 6, 1891, be returned unopened to the several bidders, and that the several checks accompanying said bids be also returned to said several bidders.

LAW DEPARTMENT,
OFFICE OF THE COUNSEL TO THE CORPORATION,
NEW YORK, May 20, 1891.

Hon. THEODORE W. MYERS, *Comptroller:*

SIR—I have received your letter of the 7th instant, calling my attention to the resolution adopted by the Aqueduct Commissioners, against the protest of the Comptroller, on May 6, 1891, directing the Secretary of said Commissioners to advertise for bids for erecting a record and storage building; also for grading, improving and fencing the adjoining grounds near the One Hundred and Thirty-fifth Street Gate-house.

You inquire whether, in my opinion, the Aqueduct Commissioners have any legal authority, under the provisions of chapter 490 of the Laws of 1883, to contract for the construction of a building for the preservation of the records of the work of construction of the completed New Aqueduct, as well as for the safe-keeping of the records of the Department of Public Works.

You suggest that the storage of the records can be accomplished at very little expense in premises already leased, or in the building in process of erection in One Hundred and Twenty-first street and Sylvan place, or in the proposed municipal building, provision for which has already been made by law, and that the Department of Public Works should have jurisdiction of the erection of any building which might be necessary to preserve the records, which must ultimately be turned over to that Department.

The power of the Commissioners of the New Croton Aqueduct is defined by chapter 490 of the Laws of 1883. The title of that act indicates that the jurisdiction of the Commissioners is intended to embrace only providing for "new reservoirs, dams and a new aqueduct, with the appurtenances thereto, and for the purpose of supplying the City of New York with an increased supply of pure and wholesome water."

When this act was enacted a reservoir already existed which was in the charge of the Department of Public Works. The evident design of the act was to increase the facilities for procuring a water supply; the commission created by the act was obviously intended to exist only during the period that the execution of the work authorized by the statute should be in progress.

When the task of providing the dams, reservoirs, aqueducts and appurtenances thereto, necessary for the purpose of procuring an increased supply of water, shall be completed, it is intended that the powers of the Commissioners shall cease.

I am unable to discern in the act any expression of an intent to authorize the Commission to erect permanent buildings for office purposes, or for any similar use.

Their duties under the act seem to be confined to supplying the structures and appliances actually necessary for use in procuring the increased supply of water.

By section 41 of the act, the Aqueduct Commissioners are authorized "to provide suitable offices and conveniences for the transaction of the business of the Commission, and to provide proper and needful furniture and safes for the safe-keeping of its documents, and to employ a secretary and all necessary clerks and messengers or employees, subject to the approval of the Board of Estimate and Apportionment of the City of New York."

The section quoted seems to express the only power intended to be given to the Commission in relation to supplying offices and conveniences for the transaction of business; the authority defined in the section is expressly confined to securing the conveniences to be used by the Commission in the transaction of its business; such authority obviously cannot be deemed to include the construction of a permanent building for the future use of the Department of Public Works in the transaction of its business, when the business of the Commission shall have been completed.

The further expression of the section quoted, by which the Commission is authorized to provide needful furniture and safes, seems to me to indicate the extent to which the Commission may go in incurring expense for the preservation of documents.

I am, therefore, unable to discover any expression of an intent on the part of the Legislature to empower the Aqueduct Commissioners to construct the record-house which their resolution is intended to provide; and in view of the limited authority conferred upon the Commissioners, it does not seem to me that authority to construct the proposed building should be implied; such implication of power seems to me to be unnecessary, in view of the fact that upon the completion of the Aqueduct the custody of the structure, its appurtenances and its records will devolve upon the Department of Public Works, which department, under the direction of the permanent authorities of the municipal corporation, will be empowered to supply such facilities for preserving the records in question as may be found to be needful.

I therefore advise you that, in my opinion, the Aqueduct Commissioners have no power to undertake the construction of the proposed record-house.

Yours, respectfully,

(Signed) WM. H. CLARK, Counsel to the Corporation.

The report was approved, and the preamble and resolution adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott, and Cannon—4.

In pursuance to the following notice, published for fifteen consecutive days in the CITY RECORD, New York "World," and "Commercial Advertiser," bids were received for building the head-house and engine-room superstructure, etc., at Shaft No. 25, on Section No. 12 of the New Croton Aqueduct:

AQUEDUCT COMMISSIONERS' OFFICE,
ROOM 209, STEWART BUILDING, No. 280 BROADWAY,
NEW YORK, May 7, 1891.

To Contractors.

Bids or proposals for building the head-house and engine-room superstructure, etc., at Shaft No. 25, on Section No. 12 of the New Croton Aqueduct, as called for in the approved forms of contract and specifications on file in the office of the Aqueduct Commissioners, will be received at this office until 3 o'clock P. M. on Monday, May 25, 1891, at which place and hour they will be publicly opened by the Aqueduct Commissioners, and the award for doing said work will be made by said Commissioners as soon thereafter as possible.

Blank forms of contract and specifications therefor, and bids or proposals and proper envelopes for their inclosure, can be obtained at the above office of the Aqueduct Commissioners on application to the Secretary.

By order of the Aqueduct Commissioners.

JAMES C. DUANE, President.

JOHN C. SHEEHAN, Secretary.

The following bids received for doing said work, upon which the required deposits had been made, were then opened and read aloud by the Secretary:

No. 1. William H. Baker	$47,960 00
No. 2. James A. Smith	39,616 00

Whereupon, on motion of Commissioner Scott, the following preamble and resolution were adopted :

Whereas, Bids for building the head-house and engine-room superstructure, etc., at Shaft No. 25, on Section No. 12 of the New Croton Aqueduct, having been received and publicly opened and read ; therefore

Resolved, That the Chief Engineer is hereby directed to have said bids calculated and tabulated, and submit the same, together with his estimates of the work, at a meeting of the Construction or Executive Committee of the Aqueduct Commissioners, for consideration and canvassing by them, at 3 o'clock P. M., on the 26th day of May, 1891 ; and the bids and checks of the bidders so received are hereby referred to the Committee of Finance and Audit for examination and report to the Commissioners as to their formality and the sufficiency of the sureties proposed by the bidders.

A communication was received from the Chief Engineer, submitting a detailed estimate of the cost of building the head-house and engine-room superstructure, etc., at Shaft No. 25, on Section No. 12 of the New Aqueduct, amounting to $40,742 50.

On motion of Commissioner Tucker, the same was referred to the Construction or Executive Committee.

It appearing that the resolution directing that the bid-box be closed and the keys given to the President, and authorizing the Secretary to receive bids for building the record and storage building, and also for building the head-house and engine-room superstructure at Shaft 25, was presented out of its regular order, on motion of Commissioner Scott, it was ordered that the said resolution be set out on the minutes as having been the first acted upon by the Commissioners at this meeting.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their office, No. 209 Stewart Building, on Wednesday, May 27, 1891, at 3 o'clock P. M.

Present—The Commissioner of Public Works, and Commissioners Duane, Tucker, Scott and Cannon.

The Committee of Finance and Audit reported their examination and audit of bills contained in Vouchers Nos. 6998 to 7014, inclusive, amounting to $1,132.34.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following communication, received from the Chief Engineer, and recommended that the same be spread in full on the minutes and filed:

NEW YORK, May 26, 1891.

Schedule of the flow at Croton Dam into the New Aqueduct, as per request of the Chief Engineer of the Croton Aqueduct:

Since the last weekly report the flow of water has continued at the rate of 84,000,000 gallons per 24 hours.

A. FTELEY, Chief Engineer.

On motion of Commissioner Cannon, the recommendation was approved.

The Committee also presented the following:

The Construction or Executive Committee report:

That they have examined the two bids received for building the head-house and engine-room superstructure, etc., at Shaft No. 25, on Section 12 of the New Aqueduct, and find the lowest bid, that of James A. Smith, to be an unbalanced one, and the bid of William H. Baker to be greatly in excess of the estimate of the Chief Engineer for doing said work. The Committee, therefore, recommend the adoption of the following resolution:

Resolved, That the bids received on May 25, 1891, for building the head-house and engine-room superstructure, etc., at Shaft No. 25, on Section 12 of the New Aqueduct, be and the same are

hereby rejected ; and the President and Secretary are hereby directed to readvertise for bids for doing said work.

The report was approved and the resolution adopted by the following vote :

Affirmative—The Commissioner of Public Works, and Commissioners Duane, Tucker, Scott and Cannon—5.

The Committee also presented forms of contract, specifications and bond, received from the Commissioner of Public Works on May 27, 1891, to provide for finishing Shaft No. 21, on Section B of the New Aqueduct, and recommended the adoption of the following resolutions :

Resolved, That the forms of contract, specifications and bond, submitted by the Commissioner of Public Works on May 27, 1891, and approved by the Counsel to the Corporation "as to form," for finishing Shaft No. 21, on Section B of the New Aqueduct, be and the same are hereby approved and adopted ; and the Secretary is hereby directed to have triplicate copies thereof prepared for certification by the Aqueduct Commissioners and filed in accordance with section 25, chapter 490, Laws of 1883.

Resolved, That the President and Secretary be and they are hereby directed to advertise in the CITY RECORD, New York "World," and "Commercial Advertiser," a notice and advertisement inviting sealed bids or proposals for finishing Shaft No. 21, on Section B of the New Aqueduct, as provided for in the contract and specifications this day approved and adopted by the Aqueduct Commissioners.

The resolutions were adopted by the following vote :

Affirmative—The Commissioner of Public Works, and Commissioners Duane, Tucker, Scott and Cannon—5.

The Committee also recommended the adoption of the following resolution :

Resolved, That the action of the Chief Engineer in detailing Superintendents of Dam Construction Patrick Daly, Isaac Thomas and James McCartney to report for temporary work on June 1, 1891, be and hereby is approved.

On motion of Commissioner Scott, the same was adopted.

The Committee also presented the following communication, received from the Chief Engineer :

NEW YORK, May 27, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—Mr. J. M. Waddle, the contractor for the blow-off at Shaft 24 of the New Aqueduct, having reported, as contemplated by the contract, that the pipes to be furnished by him are ready for inspection, I have asked Mr. G. W. Whitman whether he will inspect those pipes on the same terms as heretofore for Section 16 and other work on the New Aqueduct.

I am in receipt of his answer, in which he says that he will attend to the work mentioned on the same terms as before, and I respectfully recommend that he be instructed to proceed with the work at once.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution :

Resolved, That authority is hereby given to the Chief Engineer to employ G. W. Whitman to do the work above referred to, and upon the terms therein set forth.

On motion of Commissioner Scott, the report was approved and the resolution adopted.

On motion of Commissioner Scott, the minutes of stated meeting of May 20, 1891, were ordered approved.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, June 3, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

The Committee of Finance and Audit reported their examination and audit of bills contained in Vouchers Nos. 7018 to 7032, inclusive, amounting to $1,588.68.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following communication received from the Chief Engineer, and recommended that the same be spread in full on the minutes and filed :

NEW YORK, June 2, 1891.

Schedule of the flow at Croton Dam into the New Aqueduct, as per request of the Chief Engineer of Croton Aqueduct :

Since the last weekly report the flow of water has continued at the rate of 84,000,000 gallons per 24 hours.

A. FTELEY, Chief Engineer.

On motion of Commissioner Tucker, the recommendation was approved.

The Committee also recommended the adoption of the following resolution :

Resolved, That the action of the Chief Engineer in cancelling the detailing of Isaac Thomas, Superintendent of Dam Construction, to temporary duty on June 1, 1891, be and hereby is approved.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That the bid-box be closed, and the keys given to the President ; and that the Secretary, John C. Sheehan, be authorized by this Commission to receive the bids for building the head-house and engine-room superstructure, etc., at Shaft No. 25, on Section 12 of the New Croton

Aqueduct; also bids for finishing Shaft No. 21, on Section 10B of the New Croton Aqueduct, as called for in the approved forms of contract and specifications on file in the office of the Aqueduct Commissioners; also to receive the checks of the bidders, and to make the necessary preparation for opening the bids received for doing said work under the law.

On motion of Commissioner Scott, the same was adopted.

The Secretary presented the following communication:

CITY OF NEW YORK – FINANCE DEPARTMENT,
COMPTROLLER'S OFFICE,
June 2, 1891.

JOHN C. SHEEHAN, Esq., *Secretary, etc.:*

SIR—On April 10, ult., the Comptroller issued $100,000 Additional Water Stock, 3 per cent., taken by the Commissioners of the Sinking Fund at par. Nothing issued in May.

Respectfully,

I. S. BARRETT, General Bookkeeper.

On motion of Commissioner Tucker, the same was ordered entered upon the books of the Commission and filed.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, June 10, 1891, at 3 o'clock P. M.

Present—The Comptroller, and Commissioners Duane, Scott and Cannon.

The Committee of Finance and Audit reported their examination and audit of Vouchers Nos. 7034 to 7037, inclusive, being estimates for work done by contractors, amounting to $25,829.29; also of bills contained in Vouchers Nos. 7038 to 7051, inclusive, amounting to $958.58.

On motion of Commissioner Scott, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented a communication, received from the Chief Engineer, with reference to procuring cast-iron covers and appurtenances required for Shaft No. 25 of the New Aqueduct.

On motion of Commissioner Cannon, the same was referred back to the Committee.

The Committee also presented the following communication, received from the Chief Engineer:

NEW YORK, June 9, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—I have to report the employment of the following-named Laborers at the rate of $2 per day each.

James McDonald, who was assigned to duty with the Engineer Corps, Reservoir "D," on the 4th instant; and

Leander Clements, assigned to duty, Reservoir "D," on the 8th instant; also

John D. Grannis, on duty with the topographical party under Assistant Engineer Roberts, on the 2d inst., in place of Cornelius Plass, deceased.

This is to ask you to approve of my action in engaging such labor.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommend the adoption of the following resolution:

Resolved, That the action of the Chief Engineer in employing the above-named persons be and hereby is approved.

On motion of the Comptroller, the report was approved and the resolution adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, Eugene L. Tice is hereby appointed to the position of Laborer, at two dollars per day, with the diamond drill parties, to take the place of William Bath, who has left the work.

On motion of Commissioner Scott, the same was adopted.

The Committee also presented the following communication received from the Chief Engineer :

NEW YORK, June 9, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—I have obtained the accompanying bids for furnishing and delivering eight metal valve seatings for the blow-off gates at Shaft 25.

The names of the bidders and the amounts bid are as follows :

Names of Bidders.	Amounts Bid.
Jonson Foundry and Machine Company	$200 00
The Dumbarton Iron Works—Messrs. Reid & Duff	215 00

This is to ask you to authorize me to order the said valve-seatings from the Jonson Foundry and Machine Company, who are the lowest bidders.

I am, very respectfully,

A. FTELEY, Chief Engineer.

And recommend the adoption of the following resolution :

Resolved, That authority is hereby given to the Chief Engineer to order the work of furnishing and delivering eight metal valve-seatings for the blow-off gates at Shaft No. 25 of the New Aqueduct from the Jonson Foundry and Machine Company at their bid of two hundred dollars, it being the lowest bid received for doing said work ; and an appropriation of said amount is hereby made to cover the cost of the work in question.

The report was approved and the resolution adopted by the following vote :

Affirmative—The Comptroller, and Commissioners Duane, Scott and Cannon—4.

The Committee also recommended the adoption of the following resolution :

Resolved, That authority is hereby given to the Chief Engineer to hire, temporarily, additional room in the People's Bank building, in Yonkers, N. Y., in which to keep the safe recently rented for Division Engineer Craven, the expense thereof not to exceed nine dollars per month.

On motion of Commissioner Scott, the same was adopted.

The Committee also, presented the following communication received from the Chief Engineer, and recommended that the same be spread in full on the minutes and filed :

NEW YORK, June 9, 1891.

Schedule of the flow at Croton Dam into the New Aqueduct, as per request of the Chief Engineer of the Croton Aqueduct.

Since the last weekly report the flow of water has continued at the rate of 84,000,000 gallons per 24 hours.

A. FTELEY, Chief Engineer.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also presented the following communication, received from the Board of Estimate and Apportionment, and recommended that the same be spread on the minutes and filed :

BOARD OF ESTIMATE AND APPORTIONMENT– CITY OF NEW YORK.

CITY OF NEW YORK—FINANCE DEPARTMENT,
COMPTROLLER'S OFFICE,
June 5, 1891.

To the Board of Estimate and Apportionment :

I present herewith a communication from the Secretary of the Aqueduct Commission, being an extract from the minutes of a stated meeting of the Commissioners, held May 20, 1891, submitting forms of agreement between one Francis Larkin, of the Town of Ossining, and Thomas J. Bushell, of the Town of Yorktown, and the City of New York, to purchase certain lands at Croton Dam which are required for highway purposes. The communication is accompanied with extracts from the minutes of the several meetings of the Commissioners at which this question was discussed ; also, the appraised valuation by experts of the property to be taken, together with the reports of the Chief Engineer and communications of counsel. The area of the Bushell piece is fixed at 2.116 acres, and the price $350 for the parcel ; the area of the Larkin plot is 11.272 acres, and the price therefor, $1,400. The property is deemed necessary to be taken by the Aqueduct Commission for the purpose of constructing highways, and the prices are regarded as fair and reasonable, in view of the fact that much time and considerable expense are saved by purchase by agreement rather than by the formal method of condemnation by Commissioners duly appointed by the Court. I offer the following resolution for such action as this Board may deem advisable.

Respectfully,

THEO. W. MYERS, Comptroller.

And offered the following preamble and resolutions :

Whereas, The Aqueduct Commissioners have presented forms of agreement to purchase certain lands and premises in the County of Westchester for highway purposes in connection with the work of the New Aqueduct ; and

Whereas, The prices stated for such property are deemed fair and reasonable by the experts for the City ; therefore

Resolved, That the action of the Aqueduct Commission be and is hereby approved in the matter of taking a certain 2 116-1000 acres of land in the Town of Yorktown, County of Westchester, for highway purposes, in connection with the New Aqueduct, belonging to Thomas J. Bushell, for the sum of three hundred and fifty dollars ($350) ; and also 11 272-1000 acres of land in the Town of Ossining, County of Westchester, from Francis Larkin, for the sum of fourteen hundred dollars ($1,400) ; and

Resolved, That the Comptroller be and is hereby authorized and directed to pay the said amounts to the said Thomas J. Bushell and Francis Larkin upon the proper vouchers of the Aqueduct Commissioners.

A true copy of preamble and resolutions adopted by the Board of Estimate and Apportionment June 5, 1891.

CHARLES V. ADEE, Clerk.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also presented the following :

The Construction or Executive Committee present herewith release executed by the authorities of the Town of Mount Pleasant, Westchester County, New York, whereby the said town, in consideration of the sum of $1,800, releases and discharges the City of New York from all liability or responsibility from or on account of the acquisition, use or occupation of the highways in said town, particularly the highway leading from John W. Horton's lands, in the Town of Mount Pleasant, in a generally southerly direction across the Pocantico river, at or near Cut No. 8, towards the Town of North Tarrytown ; and recommend that a copy of the same be filed in this office, and the original transmitted to the Comptroller.

On motion of Commissioner Scott, the report was approved and the recommendation adopted.

On motion of Commissioner Cannon the minutes of adjourned meeting of May 25, and of stated meeting of May 27, 1891, were ordered approved.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, June 17, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

In the absence of the Secretary, Auditor J. C. Lulley acted as Secretary pro tem.

In pursuance to the following notice, published daily for fifteen consecutive days, commencing with May 29, 1891, in the CITY RECORD, New York "World" and "Commercial Advertiser," bids were received for building the head-house and engine-room superstructure, etc., at Shaft No. 25, on Section 12 of the New Croton Aqueduct:

AQUEDUCT COMMISSIONERS' OFFICE,
ROOM 209, STEWART BUILDING, No. 280 BROADWAY,
NEW YORK, May 28, 1891.

To Contractors.

Bids or proposals for building the head-house and engine-room superstructure, etc., at Shaft No. 25, on Section 12 of the New Croton Aqueduct, as called for in the approved forms of contract and specifications on file in the office of the Aqueduct Commissioners, will be received at this office until 3 o'clock P. M. on Wednesday, June 17, 1891, at which place and hour they will be publicly opened by the Aqueduct Commissioners, and the award for doing said work will be made by said Commissioners as soon thereafter as possible.

Also bids or proposals for finishing Shaft No. 21, on Section B of the New Aqueduct, in the Twenty-fourth Ward of the City of New York.

Blank forms of contract and specifications for doing said work, and bids or proposals, and proper envelopes for their inclosure, can be obtained at the above office of the Aqueduct Commissioners on application to the Secretary.

By order of the Aqueduct Commissioners.

JAMES C. DUANE, President.

JOHN C. SHEEHAN, Secretary.

The following bids, upon which the required deposits had been made, were then opened and read aloud by the Secretary:

No. 1. William H. Baker	$41,880 00
No. 2. Richard H. Casey	312,437 31
No. 3. Jared A. Smith	48,139 00

Whereupon, on motion of Commissioner Scott, the following preamble and resolution were adopted:

Whereas, bids for building the head-house and engine-room superstructure, etc., at Shaft No. 25, on Section 12 of the New Aqueduct, having been received and publicly opened and read; therefore

Resolved, That the Chief Engineer is hereby directed to have said bids calculated and tabulated, and submit the same, together with his estimates of the work, at a meeting of the Construction or Executive Committe of the Aqueduct Commissioners, for consideration and canvassing by them, at 3 o'clock P. M., on the 23d day of June, 1891, and the bids and checks of the bidders so received are hereby referred to the Committee of Finance and Audit for examination and report to the Commissioners as to their formality and the sufficiency of the sureties proposed by the bidders.

On motion of Commissioner Scott, the following resolution was adopted:

Resolved, That the President be and hereby is authorized to consult with the Counsel to the Corporation as to the proper course to be pursued in reference to the completion of Shaft No. 21, on Section 10B of the New Aqueduct.

The Committee of Finance and Audit reported their examination and audit of Vouchers Nos. 7053 and 7054, being estimates for work done by contractors, amounting to $6,271.74; also of bills contained in Vouchers Nos. 7055 to 7072, inclusive, amounting to $1,250.25.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following communication received from the Chief Engineer, and recommended that the same be spread on the minutes and filed:

NEW YORK, June 16, 1891.

Schedule of the flow at Croton Dam into the New Aqueduct, as per request of the Chief Engineer of the Croton Aqueduct.

Since the last weekly report the flow of water has continued at the rate of 84,000,000 gallons per twenty-four hours.

A. FTELEY, Chief Engineer.

On motion of Commissioner Tucker, the recommendation was approved.

The Committee also presented the resignation of Lowndes A. Smith, Stenographer and Typewriter in the office of the Chief Engineer, and recommended that the same be accepted, to take effect July 1, 1891.

On motion of Commissioner Scott, the same was accepted.

The Committee also presented the following communication, received from the Chief Engineer:

NEW YORK, June 16, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—I beg to transmit herewith a letter received from Division Engineer Burbank, in charge of the Construction of the East Branch Dam and of the two dams at Bog Brook.

I understand that a copy of the same was sent to General Duane, President of the Aqueduct Commissioners.

Under the circumstances, I must reluctantly recommend that Mr. Burbank's resignation be accepted, to take place when his successor is appointed; and in doing so I take pleasure in thus formally calling your attention to the successful manner in which Mr. Burbank has performed his duties.

His recommendation that Mr. Walter McCulloh be designated to succeed him is heartily seconded by myself. As the work at Brewsters is approaching completion, it is essential that the Engineer in charge should have an accurate knowledge of it. That knowledge Mr. McCulloh possesses, and inasmuch as he is otherwise well qualified to take charge of the work, I respectfully recommend that he be appointed Division Engineer at such salary as you may designate. Mr. McCulloh is now Senior Assistant Engineer under Mr. Burbank, at a salary of $1,800 per year.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolutions:

Resolved, That in accepting the resignation of Division Engineer George B. Burbank the Aqueduct Commission desires to place on record its regret at losing Mr. Burbank's valuable services and its high appreciation of the manner in which he has performed his duty in the several positions which he has successively held in the Engineer Corps.

Resolved, That Walter McCulloh be and he is hereby appointed Division Engineer in charge of the construction of the East Branch Dam and of the two dams at Bog Brook, to succeed George B. Burbank, resigned, at a salary of three thousand dollars per annum.

The report was approved and the resolutions adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also recommended the adoption of the following resolution:

Resolved, That the accompanying bill of W. R. Warfield, amounting to one hundred and five dollars and sixty-two cents, being for services rendered in the completion of the records of the Fifth Division of the New Aqueduct, be and hereby is approved and ordered certified to the Comptroller for payment.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following resolution:

Resolved, That, upon the recommendation of the Chief Engineer, appropriations are hereby made as follows:

1. An appropriation of twenty-two dollars for lithographing copies of the contract drawings for grading and improving grounds at the One Hundred and Thirty-fifth Street Gate-house.

2. An appropriation of twenty-seven dollars for furnishing lithographed copies, on bond paper, of the contract drawings for the road and retaining-wall at Croton Dam.

The resolution was adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also presented the following communications, received from the Chief Engineer :

NEW YORK, June 9, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—I have obtained the accompanying bids for a cast-iron cover and appurtenances, which has become necessary at Shaft 25 :

Names of Bidders.	Amounts Bid.
Coldwell, Wilcox Company	$89 00
Joseph Edwards & Co.	106 00
John Fox	110 00
Jonson Foundry and Machine Company	125 00

This is to ask you to authorize me to order the said cover from Coldwell, Wilcox Company, who are the lowest bidders.

As, however, owing to the recent burning down of the machine-shop of that firm, I have some doubts as to their ability to finish this piece of machinery within reasonable time, I would ask you to authorize me to order it from the next lowest bidder, Messrs. Joseph Edwards & Co., if, in my judgment, I find it for the interests of the City to do so.

I am, very respectfully,

A. FTELEY, Chief Engineer.

NEW YORK, June 16, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—On the subject matter of my report as to certain iron covers at Shaft 25 which you have referred back to me, I beg to state that from some further information that I have procured in regard to the facilities of Coldwell, Wilcox Company, I believe that they can do this work satisfactorily, and I would recommend that the work be given to them.

I am, very respectfully,

A. FTELEY, Chief Engineer.

And recommended the adoption of the following resolution :

Resolved, That the Chief Engineer be and he is hereby authorized to procure cast-iron covers and appurtenances, required at Shaft No. 25 of the New Aqueduct, from Coldwell, Wilcox Company at their bid of eighty-nine dollars, it being the lowest bid received for doing said work.

On motion of Commissioner Scott, the reports were approved, and the resolution adopted.

The Committee also presented the following communication, received from the Comptroller, together with the following communications, received from the Chief Engineer :

CITY OF NEW YORK,
FINANCE DEPARTMENT— COMPTROLLER'S OFFICE,
June 5, 1891.

Gen. J. C. DUANE, *President, Aqueduct Commissioners:*

SIR—I desire to call your attention to the fact that attached to the pay-rolls of the Aqueduct Commissioners, as received by this Department, up to this date, is a certificate that the persons named in the said pay-rolls were lawfully appointed by the Aqueduct Commissioners; that the services set forth therein were necessary for the proper transaction of the business of said Commissioners, in the construction of the Aqueduct, dams, reservoirs, etc., provided for by chapter 490 of the Laws of 1883 of the State of New York.

In view of the fact that nearly all of the sections of the New Croton Aqueduct have been completed and accepted by the Aqueduct Commissioners, and that water is flowing through and being distributed from the same, I would respectfully inquire whether any portion of the services set forth on the last weekly and monthly pay-rolls of the Aqueduct Commissioners are connected with the maintenance of said New Aqueduct, or any portion thereof, or with any work other than the transaction of the business of said Commissioners in the "construction of the Aqueduct, dams, reservoirs, etc., provided for by chapter 490 of the Laws of 1883, of the State of New York," and if so I would respectfully request that you will state the names of the persons employed in works of maintenance and in works other than that of construction as aforesaid.

This inquiry is prompted because of the fact that the provisions of chapter 490 of the Laws of 1883, concerning the issue of bonds and payment therefrom for services rendered and work done under said act, would seem to apply only to works of construction, and not to any work or services connected with the maintenance of said New Croton Aqueduct, dams, reservoirs, etc.

Very respectfully,

THEO. W. MYERS, Comptroller.

NEW YORK, June 16, 1891.

Gen'l J. C. DUANE, *President Aqueduct Commissioners:*

DEAR SIR—You have referred to me for my report a communication from the Comptroller, dated June 5, 1891, as to the number of men employed for the maintenance of the Aqueduct. I beg to report as follows:

Since the completion of a portion of the New Aqueduct, the force in charge has been so arranged that the work of maintenance has become a part of the duties of men otherwise employed in construction, or in the preparation of the final estimates and records. A number of men, who during the winter were mostly engaged in the work of maintenance, are now almost exclusively engaged in the work of construction, and I have to state that even if the flow in the Aqueduct were not interrupted there is not a man, who, in my judgment, should not be retained at present.

The letter of the Comptroller is herewith returned.

I am, very respectfully,

A. FTELEY, Chief Engineer.

NEW YORK, June 17, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—In addition to my letter of yesterday to General J. C. Duane, President of the Aqueduct Commissioners, in reference to the maintenance of the New Aqueduct, and at your request, I beg to add the following remarks.

Your attention should be called to the fact that there are seven gate-houses on the line of the Aqueduct and also about sixty large gates of very expensive and elaborate construction, all of which must be kept in perfect order for the regulation of the flow of water in the New Aqueduct, and even

if the Aqueduct were allowed to remain idle, it would still be an exercise of only common prudence to provide reliable men to watch these gates and guard against the possibility of damage.

You will notice by the following list that the work of maintenance of the New Aqueduct and of preparing the necessary records is mostly performed by employees who have charge of construction.

The following list of employees does not include the engineering work in the Croton Valley or about the dams under construction.

Fifth Division.

Edward Wegmann, Jr., Division Engineer.
Maurice A. Viele, Assistant Engineer.
Cornelius V. V. Powers, Assistant Engineer.
George E. Washburn, Leveler.
Benjamin L. Blauvelt, Axeman.
Charles McKeon, Axeman.
W. J. Garvin, Axeman.
Henry O. Cole, Foreman.
James F. McDonough, Foreman.
Richard S. Gillespie, Foreman Machinist, Shaft 25.
Harry James, Journeyman Machinist, Shaft 25.
William T. Giles, Journeyman Machinist, Shaft 25.
Richard D. Philbin, Journeyman Machinist, Shaft 25.
James E. Kearns, Assistant Machinist, Shaft 25.
Daniel Manning, Laborer, Shaft 25.

Fourth Division.

Frederick W. Watkins, Assistant Engineer.
Herbert C. Alden, Assistant Engineer.
Macrae Sykes, Computer.
Mrs. Flora M. Bowers, Typewriter.
Andrew J. Sparrow, Foreman.
Augustus Travis, Laborer.

Second Division.

Frederick B. Rogers, Assistant Engineer.
John Dynan, Stableman.
William Guilfoyle, Laborer.

First Division.

William S. Page, Assistant Engineer.
Ira Ganong, Chainman.
John Gallery, Axeman.
W. J. Walker, Foreman.

All the above are employed on the work of construction.

Beverly R. Value, Assistant Engineer,
David O'Shea, Leveler,
Mattie Meadows, Typewriter,

—are employed in general office work relative to construction, and also in the preparation and collation of records and documents.

Peter Nevins, Axeman,
Arthur L. Beatty, Axeman,
Peter B. Lynt, Laborer,
Charles Burpo, Laborer,
Thomas Foley, Laborer,
Tony Mount, Laborer,

—are employed as Laborers for the care of the gate-houses as above-mentioned, but they, at the same time, are doing laboring work connected with construction.

I am, very respectfully,

A. FTELEY, Chief Engineer.

The Committee also presented the following communication, and recommended that the same be spread in full on the minutes, and that the President be directed to sign and transmit it to the Commissioner of Public Works:

AQUEDUCT COMMISSIONERS' OFFICE,
STEWART BUILDING, No. 280 BROADWAY,
NEW YORK, June 17, 1891.

Hon. THOMAS F. GILROY, *Commissioner of Public Works:*

SIR—Some of the members of the Aqueduct Commission have received from the Comptroller an intimation that he may hereafter refuse to honor the weekly pay-rolls of this Commission. If he should adopt that course the Commission would be unable to pay a number of its employees who are now engaged on the Aqueduct between Croton Lake and the Central Park.

We do not know that this course, if adopted, will deprive us of the services of these employees, but it may do so, and, if it should, would necessitate the shutting off of the water. This result cannot, of course, be permitted at any cost.

I am, therefore, instructed by the Commission to ask you to hold yourself in readiness to supply from your Department, at short notice, if necessary, the few men requisite to regulate and watch the flow of water.

The Aqueduct Commission regrets that the work of construction has not yet sufficiently advanced to warrant them in turning over the whole structure to your Department, but we feel assured that your appreciation of the necessity for keeping up the present supply of water will lead you, if the occasion arises, to furnish the small amount of labor necessary to keep the Aqueduct in use during the few months that must elapse before it is finally completed.

Yours, very truly,

President.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also presented the following communication, and recommended that the same be spread in full on the minutes, and that it be signed by the President and transmitted to the Counsel to the Corporation:

AQUEDUCT COMMISSIONERS' OFFICE,
STEWART BUILDING, No. 280 BROADWAY,
NEW YORK, June 17, 1891.

Hon. WILLIAM H. CLARK, *Counsel to the Corporation*:

SIR—A representative of the Comptroller stated yesterday, at a meeting of the Committee on Construction of the Aqueduct Commissioners, that the Comptroller would probably submit to you within a few days a question which has recently been the subject of correspondence between himself and the Aqueduct Commission. If we may judge from the tenor of the Comptroller's letter to the Commission upon this subject, his information upon the facts is inexact, and in order that you may be fully apprised as to all the circumstances, the Commissioners have instructed me to forward this letter to you.

As you are aware, the New Aqueduct, although not yet wholly completed, has been for some eleven months in operation, and is now bringing to the city a daily supply of eighty-four million gallons of water, which is something over one-half the total consumption. You will doubtless also recall that the necessity for a greater supply of water than could be furnished by the Old Aqueduct became so pressing during last summer, that extraordinary efforts and measures were taken to put the New Aqueduct into service, although at that time even the tunnel was not fully completed, and the work necessary to be done on the surface had hardly been commenced. Since July 15, the tun-

nel proper has been finished ; most of the necessary gates and appliances have been put in place, and the other works of construction necessary to make a completed structure have been pushed forward with all possible speed, and are now rapidly progressing. The work of construction still remaining to be done, and now either under contract or advertised, consists, in the main, of the construction of a head-house over the large gate-house at Croton Lake, and the building of a road (for which the land has just been acquired), for the purpose of relieving the Old Aqueduct from the danger resulting from the use of the present road, which runs over it ; the building of eleven head-houses over the open shafts along the line ; the completion of Shaft No. 21, on Section 10 ; the building of a blow-off and shaft-house on the north side of the Harlem river ; the building of a permanent head-house for the double shaft on the south side of the Harlem river, and the grading of the ground and the preparation for the erection of a pumping station, and the grading and fencing of the ground around the One Hundred and Thirty-fifth street gate-house. In addition to this the pipe-line from One Hundred and Thirty-fifth street to Central Park, although accepted, is still in a certain sense under contract, as the contractors, by the terms of their contract, are required to guarantee its condition for one year after acceptance, for which the City has retained a percentage of the contract price.

The Aqueduct Act (chapter 490 of the Laws of 1883), seems to have contemplated that the Aqueduct Commission should proceed as rapidly as possible to complete each of the structures confided to them. It is entirely silent as to what disposition should be made of any of these structures when completed, and at the proper time the Aqueduct Commission will find it necessary to call upon you to advise them as to what course should be pursued with the completed structure. At present, however, the Aqueduct is not completed, and the question suggested by the Comptroller, as we understand it, is that the Aqueduct Commission have no power or authority under the act to employ any men or pay any wages for what he terms the maintenance of the Aqueduct, by which we understand him to mean the regulation of the gates and the flowage of the water through the Aqueduct.

I enclose herewith a copy of a report made by the Chief Engineer, showing the character of work performed by the several employees of the Aqueduct between Croton Lake and the Central Park, by which you will see that by far the larger proportion of them are engaged either wholly upon the work of construction or partly on the work of construction and partly on the work of maintentenance, as above defined ; the latter, however, being very few in number, and being for the most part laborers who are paid at the rate of two dollars per day.

You will readily understand that in a work of the character and magnitude of that referred to the Aqueduct Commission, it was quite impossible to so arrange matters that all the contracts should expire and all the work be completed at the same time. It was a physical necessity that some portions of the Aqueduct should be completed before the whole structure was finished, and whether the Aqueduct Commission have or have not a strict legal right to pay men for handling the gates which are necessary to be handled in order that water may flow into the city, it is, as we think, quite clear that we would be justified in employing an equal number of men as Watchmen, even if no water flowed through the Aqueduct at all, to preserve the City's property from damage, either malicious or accidental.

The position of affairs appears to be somewhat as follows : The public necessities absolutely demand that the flow of water through the Aqueduct should not be interrupted, particularly at this season of the year.

The Aqueduct Commission cannot turn over the Aqueduct to the Department of Public Works or to any one else, because it is not yet completed, and, until it is completed, they must retain jurisdiction over it, and must take such measures as, in their judgment, are necessary to preserve the public property from damage or injury. It would be subversive of all discipline and a most unfortunate state of affairs if the tunnel and gates were to be placed under the jurisdiction and control of one Department, while the gate-houses and head-houses were under the jurisdiction of the Aqueduct Commission. Such a state of affairs would inevitably lead to constant misunderstandings and quarrels between employees of the two Departments, which would tend to render the service less effective

than it ought to be ; for while the relations between the Aqueduct Commissioners and the Commissioner of Public Works are and have been at all times of the most pleasant and cordial character, yet neither of us can control absolutely our subordinate employees, especially when they are at a distance from the main office.

It seems to us that the question raised by the Comptroller is an extremely unimportant one, in view of the very small number of men who can possibly be affected by it, and it also seems to be a most inopportune time to raise such a question, when more than at any other time during the year the health and welfare of the citizens demand an abundant and a continuous supply of water.

This letter is written to you, not to reflect in any way upon any action of the Comptroller, whether already taken or merely contemplated, but simply in order that you may be apprised of the exact condition of affairs. If there is any other information which you may desire upon this subject, it can be obtained at any time, from either the President or the Chief Engineer of the Commission. You will observe that no employee of the Aqueduct Commission is engaged wholly on the work of maintenance.

Yours, very truly,

President.

On motion of Commissioner Scott, the recommendation was approved.

The Secretary presented the following :

BOARD OF ESTIMATE AND APPORTIONMENT, CITY OF NEW YORK.

Whereas, The Aqueduct Commissioners, at a meeting of the Construction Committee on May 26, 1891, recommended that a fair and just settlement of the claim of Joseph Quinn against the City for damages incurred to his crops and property by the examination of the site for the proposed dam at Cornell's by the borings and test-pits sunk on his property would be fifty dollars ; therefore

Resolved, That the Comptroller be and is hereby authorized to pay the said amount of fifty dollars ($50) to Joseph Quinn for damages incurred as above, upon the proper voucher from the officers of the Aqueduct Commission.

A true copy of preamble and resolution adopted by the Board of Estimate and Apportionment, June 15, 1891.

CHARLES V. ADEE, Clerk.

On motion of Commissioner Scott, the same was ordered filed, and a voucher ordered drawn to provide for the payment of said bill.

The Comptroller, under date of May 29, 1891, gave notice of the issue of warrants for the payment of vouchers not certified to by the Aqueduct Commissioners for

Manhattan Island Section, additional lands	$4,747 38
Westchester County section	1,890 08
Reservoir D	1,957 35
Reservoir M	250 35

—leaving a balance to the credit of Additional Water Fund of $13,472.24. Which was ordered entered upon the books of the Commission and filed.

On motion of Commissioner Scott, the minutes of stated meeting of June 3, 1891, were ordered approved.

The Commissioners then adjourned.

J. C. LULLEY, Secretary pro tem.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their office, No. 209 Stewart Building, on Wednesday, June 24, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

In the absence of the Secretary, Auditor J. C. Lulley acted as Secretary pro tem.

The Committee of Finance and Audit reported their examination and audit of bills contained in Vouchers Nos. 7076 to 7085, inclusive, amounting to $469.25.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Committee also presented the following:

The Committee of Finance and Audit report:

That they have examined the bids and checks received June 17, 1891, for building the head-house and engine-room superstructure, etc., at Shaft No. 25 of the New Croton Aqueduct. The checks, amounting to $6,004.45, were correct and transmitted to the Comptroller, and his receipt is on file. The bids were found correct as to their formality, and the sureties proposed appear to be sufficient.

On motion of Commissioner Scott, the same was approved.

The Construction or Executive Committee recommended the adoption of the following resolution:

Resolved, That the contract for building the head-house and engine-room superstructure, etc., at Shaft No. 25, on Section 12 of the New Croton Aqueduct, be and hereby is awarded to William H. Baker at his bid of forty-one thousand eight hundred and eighty dollars, it being the lowest bid received for doing said work.

The same was adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also presented the following communication, received from the Chief Engineer, and recommended that the same be spread on the minutes and filed:

NEW YORK, June 23, 1891.

Schedule of the flow at Croton Dam into the New Aqueduct, as per request of the Chief Engineer of the Croton Aqueduct.

Since the last weekly report the flow of water has continued at the rate of 84,000,000 gallons per 24 hours.

A. FTELEY, Chief Engineer.

On motion of Commissioner Cannon, the recommendation was approved.

The Committee also recommended the adoption of the following resolution:

Resolved, That, upon the recommendation of the Chief Engineer, the accompanying bill of Sullivan, Rider & Dougherty, for repairing bridge at Milltown, damaged by freshets, and amounting to one hundred and one dollars and ninety cents, be and hereby is approved and ordered certified to the Comptroller for payment.

The same was adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also presented the following communication, received from the Chief Engineer:

NEW YORK, June 23, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—On April 8, 1891, you authorized me to spend the sum of $250 for the repairs of the roof of the "Best" house, in Carmel, and for other repairs connected therewith.

The sum spent for the said repairs is a few dollars under $200. I now ask that I be authorized to spend the balance of this appropriation for other work about the house and outbuildings, which has been found to be necessary.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution:

Resolved, That authority is hereby given to the Chief Engineer to expend the unexpended balance of the appropriation of $250, made on April 8, 1891, for doing such work as may be found necessary on the house and outbuildings situated on the "Best" property, in Carmel, Putnam County, New York.

On motion of Commissioner Scott, the report was approved and the resolution adopted.

The Committee also presented the following communication, received from the Commissioner of Public Works, and the following opinion, received from the Counsel to the Corporation:

DEPARTMENT OF PUBLIC WORKS—COMMISSIONER'S OFFICE,
No. 31 CHAMBERS STREET,
NEW YORK, June 19, 1891.

General JAMES C. DUANE, *President, Aqueduct Commissioners:*

DEAR SIR—I have the honor to acknowledge receipt of your letter of 17th instant, stating that some of the Aqueduct Commissioners have received intimation from the Comptroller that he may

hereafter refuse to honor the weekly pay-rolls of the Commissioners, and that in such event the Commissioners would be unable to pay a number of the employees now engaged on the Aqueduct between Croton Lake and the Central Park, and would probably be deprived of the services of these employees. I am requested to hold myself in readiness to supply from this Department, at short notice, if necessary, the few men required to regulate and watch the flow of water through the Aqueduct, and it is intimated that otherwise it would become necessary to shut off the supply of water through the Aqueduct.

The closing of the Aqueduct at this or any future time would be a calamity resulting in incalculable injury, and the continuance of the supply through the Aqueduct must be maintained under all circumstances and at all hazards.

To relieve any anxiety on this account, I beg to say there is no necessity of closing the Aqueduct for want of competent men to take charge of it. This Department has for some time been, and is now, ready at any moment to take charge of the structure and to station competent men on each division to perform the duties required to keep the structure in effective operation. It only rests with the Aqueduct Commissioners to designate the time when this Department shall take charge.

Very respectfully,

THOS. F. GILROY, Commissioner of Public Works.

LAW DEPARTMENT,
OFFICE OF THE COUNSEL TO THE CORPORATION,
NEW YORK, June 22, 1891.

Hon. JAMES C. DUANE, *President of the Aqueduct Commissioners:*

SIR—I have received your letter of June, 17th inst., in which the following facts were communicated, namely:

1. The New Aqueduct, although not yet fully completed, has been for eleven months in operation, and is now bringing to the City a daily supply of 84,000,000 gallons of water.

2. That since July 15, 1890, the tunnel proper has been finished.

3. That the work of construction still remaining to be done consists, in the main, of the construction of a head-house (1) from the large gate-house at Croton Lake; (2) the building of a road; (3) the building of eleven head-houses over the open shafts along the line; (4) the completion of Shaft 21, on Section 10; (5) the building of a blow-off and shaft-house on the north side of the Harlem river; (6) the building of a permanent head-house for a double shaft on the south side of the Harlem river and the grading of the ground for the erection of a pumping station; (7) the grading and fencing of the ground around the One Hundred and Twenty-fifth Street Gate-house. The Comptroller questions the right and authority of the Aqueduct Commission, under the statute, to employ men or pay wages for the maintenance of the Aqueduct.

It is understood that the authority of the Aqueduct Commission to make expenditures for the construction of the uncompleted work upon the Aqueduct is not challenged by the Comptroller, but that officer contends that the Aqueduct Commission have no authority to incur and he has no authority to pay expenses connected with or relating to the control and maintenance of the completed tunnel, which is now in use for the conveyance of the water supply.

The act which prescribes the powers and duties of the Aqueduct Commissioners, chapter 490 of the Laws of 1883, is entitled "An act to provide new reservoirs, dams and a new aqueduct, with the appurtenances thereto, for the purpose of supplying the City of New York with an increased supply of pure and wholesome water."

The act referred to, after providing for the creation of a Board of Commissioners, provides for the preparation of plans for a new aqueduct and reservoirs.

Also for the condemnation of the lands and easements necessary to be acquired, and for the payment of the damages incurred by the owners of such lands, etc.

Also for the making of contracts for the construction of the tunnel, the dams, reservoirs and appurtenances.

The act then authorizes the Comptroller of the City of New York to raise, from time to time, on bonds of the City, sufficient moneys to pay for the lands and easements acquired, and for the expenses incurred in surveying, etc., and also for the construction of the aqueduct, dams, reservoirs, sluices, culverts, canals, pumping works, bridges, tunnels, ventilating shafts, blow-offs, and other appliances and appurtenances.

The bonds to be issued are called the additional water stock of the City of New York.

By the Consolidation Act, section 315, the Department of Public Works is invested with the cognizance and control of all structures and property connected with the supply and distribution of Croton water.

A bureau in that Department is charged with the care of all structures and property connected with the supply and distribution of Croton water; the Chief Engineer of that bureau is called the Chief Engineer of the Croton Aqueduct.

Section 357 of the Consolidation Act provides:

"The Department of Public Works is charged with the preservation of the Croton lake and all waters from which a water supply is drawn by the City, with the preservation of the banks of the Croton river and other waters from injury or nuisances, with the execution of such measures as may be necessary to preserve and increase the quantity of water and keep it pure, with the management, preservation and repairs of the dam, gates, aqueduct, high bridge, reservoirs, mains, pipes, pipe yard, and property of every description belonging to the water-works, and shall have the construction of such new works, and the purchase and laying down of such mains and pipe as may be authorized in accordance with law. Said Department shall be responsible for the supply of water and the good order and security of all the works from the Croton lake to the City, inclusive, for the exactness and durability of the structures which may be erected and of the daily work to be performed, and for the sufficiency of the supply in the pipe yard to meet every casuality, and for the fidelity, care and attention of all persons employed by the Department in watching the works and in making constructions and repairs, and shall inspect thoroughly the interior of the aqueduct and make the necessary repairs at least twice in the year."

No express provision is found in the Act for the construction of the New Aqueduct in relation to the termination of the office and functions of the Commissioners, or the disposition of the structures which they are empowered to construct, when such structures shall have been completed.

It is, however, obvious that the Act of 1883 is simply and only an act to provide for construction. No provisions are contained therein in relation to the maintenance of the Aqueduct and its appurtenances.

It is obviously the intent of the act that the official powers of the Commissioners, and their jurisdiction and control of the structures which they are to create, will cease as to each portion thereof when the same is completed and put into service.

From that time the sole duty connected with the completed structure is one of maintenance, regulation and use; and under the charter and the Consolidation Act the duty of maintenance, and the power to regulate the use and to care for all structures and property connected with the distribution of the water supply, is vested in the Commissioner of Public Works.

The Act of 1883 must be read in connection with the Consolidation Act; and, in relation to the water supply, they are acts *in pari materia*.

The work of constructing the New Aqueduct with its appurtenances has been committed by the Act of 1883 to the Aqueduct Commissioners.

As from time to time the work committed to the Aqueduct Commissioners is completed and the structure which they have created accepted and brought into use, the jurisdiction to control and use that structure passes under the Consolidation Act to the Commissioner of Public Works.

The observance of this system is important to the proper financial administration of the affairs of the municipality.

The moneys authorized to be raised by the issue of bonds under the Aqueduct Act can be used only to pay expense incurred in construction.

The expenses of maintenance of the completed portion of the work, when in use for procuring or distributing the water supply, are chargeable against the appropriations made for maintenance, and raised in the annual tax levies; such expenses cannot lawfully be paid from the proceeds of the additional water stock issued under the Aqueduct Act.

I am, therefore, of the opinion, and advise you, that the position of the Comptroller is well taken, and that you have no authority to incur expense otherwise than for works of construction.

That the custody, control and regulation of the tunnel proper, which was finished on July 15, 1890, and any other completed constructions now in use for the supply or distribution of water, belongs to the Department of Public Works, which has cognizance and control thereof; and the expense of such maintenance cannot lawfully be paid on your certificate from the proceeds of additional water stock, but must be paid, on the certificate of the Commissioner of Public Works, from the fund applicable to the maintenance of the structures and property connected with the supply and distribution of Croton water.

I remain,

Yours, very respectfully,

WM. H. CLARK, Counsel to the Corporation.

On motion of Commissioner Scott, the same were ordered spread on the minutes and filed.

The Committee also reported that at a meeting of the Committee, held on the 23d instant, the following preambles and resolutions were adopted:

Whereas, The Corporation Counsel has given his opinion that from the time of completed structure the maintenance of the tunnel and structures of the Aqueduct that are completed is vested in the Commissioner of Public Works; and

Whereas, The Commissioner of Public Works, in a communication addressed to the President of this Commission, bearing date the 19th day of June, 1891, has expressed his readiness to station competent men on each division of the Aqueduct, at whatever time the Aqueduct Commissioners shall designate, to perform the duties required to keep the structure in effective operation; and

Whereas, The Chief Engineer has verbally reported to this Committee that the running and control of the water in the Aqueduct, including the control of the gates at all the gate-houses, except the gates, machinery and appurtenances at Shaft 25, which are now under construction, and Shaft 21, which is not yet completed, can be committed to the care of the Department of Public Works, provided an arrangement is arrived at by which the work of construction still remaining to be completed will not be interfered with; therefore

Resolved, That the Chief Engineer of this Commission be and hereby is instructed to consult with the Chief Engineer of the Croton Aqueduct, and with him to report the stations and places at which it will be necessary for the Department of Public Works to place men in charge to perform such duties as may be required to keep the structure in effective operation and to prevent any interruption or diminution in the flow of the water; such assumption of charge by the Department of Public Works to be effected in such a manner as will not interfere with the works of construction now in progress or still remaining to be completed.

On motion of Commissioner Scott, the action of the Committee was approved.

The Committee also presented the following joint report, made by the Chief Engineers of the Aqueduct Commissioners and of the Croton Aqueduct, and recommended that the same be approved and spread in full on the minutes:

NEW YORK, June 24, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—In pursuance of your resolution of yesterday, we have consulted as to the best methods of transferring to the Department of Public Works the control of certain parts of the Aqueduct, and we have to report the following suggestions:

1st. The Aqueduct Commissioners to transfer to the Commissioner of Public Works the control of the gates, machinery and appliances necessary to regulate the flow of water of the Aqueduct at the following points:

The Croton Gate-house.
The three Blow-offs (so-called) at Pocantico.
Ardsley and South Yonkers.
The Gate-house at One Hundred and Thirty-fifth street.
The New Gate-house in Central Park.

It being understood that such control shall in no way interfere with the work of construction now in progress or still remaining to be completed.

2d. The Aqueduct Commissioners to retain the control of Shafts 21, 24 and 25, with all their machinery and appliances, with the understanding that the flow of water is not to be interfered with except by consent or request of the Commissioner of Public Works.

3d. The Commissioner of Public Works to station such men as he may find necessary at the above-mentioned points, and in order to facilitate the continuous running of the Aqueduct, the services of the said men to begin on Wednesday, July 1, 1891.

4th. The Chief Engineers of the Aqueduct Commission and of the Croton Aqueduct to have charge of carrying out the details of the above arrangement.

Respectfully submitted,

A. FTELEY, Chief Engineer Aqueduct Commissioners.
G. W. BIRDSALL, Chief Engineer Croton Aqueduct.

On motion of Commissioner Scott, the recommendation was approved.

On motion of Commissioner Cannon, the following resolution was adopted:

Resolved, That the President be and is hereby instructed to consult with the Chief Engineer and report at the next meeting of the Commissioners what readjustment of the force now employed, if any, can be made upon the consummation of the agreement between the Chief Engineer of this Commission and the Chief Engineer of the Croton Aqueduct, this day approved by the Commission.

The Committee also presented the following communication, received from the Chief Engineer, and recommended that the same be approved, spread in full on the minutes, and a copy of the same transmitted to the Comptroller:

NEW YORK, June 24, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—On June 10, 1890, I forwarded to you a final estimate for Section 17 of the New Aqueduct, as, owing to the circumstances of the case, I understood that the Commissioners did not wish to exercise the authority and power vested in them by the contract, Clause O, Item (a) to retain any money from the total value of the work.

The Comptroller, however, in accordance with Clause O, Items (a) and (b) of the contract, retained for a period of one year, five (5) per cent. of the whole amount of money payable under the contract; and now, inasmuch as a year has elapsed since my certificate was given, I hereby certify, under Clause O (Item c) that the pipe, special castings and their connections, the embankments, masonry work, walls and other places are in good order, and that the contractor, in my opinion, is entitled to a final payment on account of his contract for Section 17 of the New Aqueduct.

I am, very respectfully,

A. FTELEY, Chief Engineer.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also presented the following communication, received from the Chief Engineer:

NEW YORK, June 24, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—This is to inform you that in connection with the contract for building the blow-off at Shaft 24, and in conformity with the plans, I have ordered from the Passaic Rolling Mill Co. iron beams, the price of which will not exceed the sum of $200, including the delivery of the same, and to respectfully ask that my action be approved.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution:

Resolved, That the above action of the Chief Engineer be and hereby is approved, and an appropriation of $200 is hereby made to cover the expense thereby incurred.

On motion of Commissioner Tucker, the report was approved and the resolution adopted.

On motion of Commissioner Scott, the minutes of stated meeting of June 10, 1891, were ordered approved.

The Commissioners then adjourned.

J. C. LULLEY, Secretary pro tem.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, July 1, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

The Committee of Finance and Audit reported their examination and audit of bills contained in Vouchers Nos. 7092 to 7105, inclusive, amounting to $696.73.

On motion of Commissioner Tucker, the same were approved, and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following communication, received from the Chief Engineer, and recommended that the same be spread in full on the minutes and filed:

NEW YORK, June 30, 1891.

Schedule of the flow at Croton Dam into the New Aqueduct, as per request of the Chief Engineer of the Croton Aqueduct:

Since the last weekly report, the flow of water has continued at the rate of 84,000,000 gallons per 24 hours.

A. FTELEY, Chief Engineer.

On motion of Commissioner Tucker, the recommendation was approved.

The Committee also presented the following communications, and recommended the approval of the action therein referred to:

NEW YORK, June 30, 1891.

To the Committee on Construction:

GENTLEMEN—In compliance with your resolution of June 23, directing me to "consult with the Chief Engineer and report what readjustment of the force now employed, if any, can be made upon the consummation of the agreement between the Chief Engineer of this Commission and the Chief Engineer of the Croton Aqueduct, this day approved by the Commission," I have the honor

to state that arrangements have been made for turning over to the Department of Public Works all of the structures of the New Aqueduct named in the above report, the transfer to take place this day; and the Chief Engineer of this Commission has notified all the employees who have been hitherto engaged in the maintenance of the flow of water through the New Aqueduct that their services are no longer required. Under these circumstances I am of opinion that no further readjustment of the force is necessary at present.

Respectfully submitted,

J. C. DUANE, President.

NEW YORK, June 30, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—In pursuance of the resolution of the Aqueduct Commissioners of the 24th instant, by which the suggestions contained in the joint report of the Chief Engineer of the Croton Aqueduct and of myself of the same date were approved, I beg to report that I have notified Foremen Henry O. Cole, James F. McDonough, A. J. Sparrow and William J. Walker; Axeman Peter Nevins; Laborers Peter B. Lynt, Charles Burpo, Thomas Foley and Augustus Travis, that their services would not be needed after June 30, 1891. I also notified Chief Engineer Birdsall of my action in the premises, and requested him to provide accordingly for the maintenance of the flow of water in the New Aqueduct.

Axeman Arthur L. Beatty of Division 5 and Laborer Tony Mount of Division 1, who were employed on the maintenance of the Aqueduct, were detailed until further orders to report for construction work to their respective Division Engineers.

I send herewith a copy of my letter of June 25, 1891, to Chief Engineer Birdsall, which I delivered in person, and to which he verbally acquiesced, promising at the same time a formal confirmation of his verbal statement.

The above is sent to your Committee for its information and approval.

I am, very respectfully,

A. FTELEY, Chief Engineer.

NEW YORK, June 25, 1891.

Mr. GEORGE W. BIRDSALL, *Chief Engineer, Croton Aqueduct:*

DEAR SIR—Our joint report of yesterday to the Committee on Construction of the Aqueduct Commissioners having been approved on the same day by the said Commissioners, it remains with us to carry out the details of the arrangements.

I consequently notify you that in accordance with the terms of the said report, the services of the employees of this Department in charge of the maintenance of the Aqueduct at the Croton Gate-house, the Pocantico, Ardsley and South Yonkers Blow-offs, the One Hundred and Thirty-fifth Street Gate-house and the new gate-house in Central Park, will cease on June 30, 1891. I will notify them accordingly, and will ask you to so arrange the detail of your men that the service of the Aqueduct will not suffer. I understand that your supervision of the flow in the Aqueduct, for which you are to become responsible as soon as your men take the place of ours, includes the patrolling and examination of the same as well as of the pipe-lines and of their gates.

I am, respectfully,

(Signed) A. FTELEY, Chief Engineer.

On motion of Commissioner Scott, the communications were ordered spread on the minutes and the recommendations therein contained approved.

The Committee also presented the following communication, received from the Chief Engineer :

NEW YORK, June 30, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—I hereby beg to notify your Committee of the following transfers :

June 25. Axeman Arthur L. Beatty, from Division 5, to report to Division Engineer Wegmann for work on construction.

June 25. Laborer Tony Mount, from Division 1, to report to Division Engineer Gowen for work at Titicus Dam.

June 26. Superintendent of Dam Construction W. H. Langler, from Reservoir "M," to report to Division Engineer Gowen for work at Titicus Reservoir.

Rodman D. McR. Livingstone, June 26, from Reservoir "M," to report to Division Engineer Craven for work at Carmel.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution :

Resolved, That the action of the Chief Engineer in making the above transfers be and hereby is approved.

On motion of Commissioner Scott, the report was approved and the resolution adopted.

The Committee also presented forms of contract, specifications and bond, received from the Commissioner of Public Works, on June 25, 1891, to provide for constructing a highway, retaining-walls, appurtenances, etc., at Croton Dam, in the Town of Yorktown, Westchester County, New York, and recommended the adoption of the following resolutions :

Resolved, That the forms of contract, specifications and bond, received from the Commissioner of Public Works, on June 25, 1891, and approved by the Counsel to the Corporation "as to form," for constructing a highway, retaining-walls, appurtenances, etc., at Croton Dam, in the Town of Yorktown, Westchester County, New York, be and the same are hereby approved and adopted ; and the Secretary is hereby directed to have triplicate copies thereof prepared for certification by the Aqueduct Commissioners and filed in accordance with section 25, chapter 490, Laws of 1883.

Resolved, That the President and Secretary be and they are hereby directed to advertise in the CITY RECORD, New York "Tribune," and "Morning Advertiser" a notice and advertisement inviting sealed bids or proposals for doing the work above referred to, as provided in the contract and specifications this day approved and adopted by the Aqueduct Commissioners.

The report was approved and the resolutions adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also presented the following communication, received from the Chief Engineer :

NEW YORK, June 30, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—You authorized me on May 27 to employ Mr. G. W. Whitman to inspect the pipes as they were being manufactured at the foundry for the blow-off at Shaft 24 of the New Aqueduct.

I am now informed that the pipes being manufactured by the Warren Foundry and Machine Company, for Mr. M. S. Coleman, contractor for the auxiliary dam at Carmel, are ready for inspection.

This is to ask you to authorize me to employ Mr. Whitman for that work in the same capacity and on the same terms.

I would also ask you to give me the same authority to provide for the inspection at the foundries of such pipe and castings as may be offered for acceptance for the main dam at Carmel, for the Titicus Dam, and for such work as is now being contemplated by the Commissioners.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution:

Resolved, That authority is hereby given to the Chief Engineer to employ George W. Whitman to inspect at the foundries such pipe and castings as may be offered for acceptance for the main dam at Carmel, for the Titicus Dam, and for such other work as is now being contemplated by the Aqueduct Commissioners.

On motion of Commissioner Tucker, the report was approved and the resolution adopted.

The Committee also presented the following opinion, received from the Counsel to the Corporation:

LAW DEPARTMENT,
OFFICE OF THE COUNSEL TO THE CORPORATION,
NEW YORK, June 30, 1891.

Hon. JAMES C. DUANE, *President:*

SIR—I have received your letter of June 18, in relation to the completion of Section B of the New Aqueduct.

Your letter informs me of the following facts:

1. That Heman Clark, the contractor for the construction of Section 10B, has abandoned the work and refused to complete said section.

2. That after notice to him the Aqueduct Commissioners, pursuant to the right reserved in Clause P of the contract, have directed the discontinuance of said work by the contractor, and instructed the Chief Engineer to prepare and submit plans, specifications and contract for the completion of the work.

3. That the plans, specifications and contract have been prepared and bids therefor invited by advertisement, to be opened June 17, 1891.

4. That no bids were received.

5. It is probable that no person will be found to bid for the work upon a public letting.

6. That the estimated cost of the work is about $3,000.

By section 28, chapter 490 of the Laws of 1883, it is provided that in case any work shall be abandoned by any contractor, such work shall be readvertised and relet in the manner provided in the act for the original letting of such work.

By section 33 of the same act the Aqueduct Commissioners were authorized to procure any work to be done without contract which does not involve an expenditure of over $5,000, if they shall certify that in their opinion it is for the public interest that work shall be so done, and in such certificate shall state their reasons therefor, and by the terms of the contract (Clause P) the con-

tractor has agreed that in case of abandonment of the work the Commissioners shall have power to obtain, by purchase or hire, such materials, animals, implements and tools, by contract or otherwise, as they may deem necessary to complete the work, and charge the expense so incurred for such completion against the contractor, and deduct the same from any moneys that may be due or become due to the contractor under the terms of the contract.

I am of the opinion, and advise you that the Aqueduct Commissioners are authorized to procure the completion of the work in question without contract founded upon public letting, upon making a certificate required by the statute, and that under the terms of the contract a contractor will become chargeable with the expense so incurred.

I remain, very respectfully,

WM. H. CLARK, Counsel to the Corporation.

—and recommended the adoption of the following preamble and resolution ;

Whereas, Heman Clark, the contractor for Shaft 21, situated on Section 10B of the New Aqueduct, has abandoned the work at said shaft and refused to complete said shaft, which is a part of said Section 10B ; and

Whereas, After due notice given to said Heman Clark, the Aqueduct Commissioners, pursuant to the right reserved in Clause P of the contract for the construction of said section, have directed the discontinuance of the work by said contractor, and instructed the Chief Engineer to prepare and submit plans, specifications and contract for the completion of said work ; therefore

Resolved, That the Chief Engineer be and he is hereby authorized to obtain, by purchase or hire, such materials, animals, implements and tools, by contract or otherwise, as he may deem necessary to complete the work of construction of Shaft 21, on Section 10B of the New Aqueduct, the expense so incurred to be charged against the contractor for the completion of said shaft, on said Section 10B ; and we hereby certify that it is for the public interest that said shaft should be completed without delay, the said work to be done at an expense not to exceed the sum of five thousand dollars.

The report was approved, and the preamble and resolution adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Secretary presented the following :

"Whereas, The Chief Engineer of the Aqueduct Commissioners having notified the Chief Engineer of the Croton Aqueduct, of the Department of Public Works, that the services of the employees of the Aqueduct Commissioners in charge of the maintenance would cease on June 30, 1891 ; and

"Whereas, By section 41, chapter 490, Laws of 1883, the Aqueduct Commissioners are authorized to employ all necessary employees, subject to the approval of the Board of Estimate and Apportionment ; therefore

"Resolved, That, with the view of this Board complying with the provision of the statute referred to, the said Aqueduct Commissioners are hereby requested to furnish forthwith to this Board a statement of all their employees, specifying the duties attended to or services performed by each such employee, and the place where such duties are attended to or services are performed, and specifying the particular employees it is considered by the said Commissioners necessary to be

continued in their employment after the care of the Aqueduct is transferred to the Department of Public Works.

"A true copy of preamble and resolution adopted by the Board of Estimate and Apportionment July 1, 1891.

"CHAS. V. ADEE, Clerk."

On motion of Commissioner Scott, the above was referred to the Construction or Executive Committee, and the Secretary and Chief Engineer were directed to furnish to said Committee at its next meeting the information necessary to prepare an answer to the Board of Estimate and Apportionment.

On motion of Commissioner Cannon, the minutes of stated meeting of June 17, 1891, were ordered approved.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their office, No. 209 Stewart Building, on Wednesday, July 8, 1891, at 3 o'clock P. M.

Present—The Comptroller and Commissioners Duane, Tucker, Scott and Cannon.

The Construction or Executive Committee presented the following communications, and recommended that the same be spread in full on the minutes and filed:

NEW YORK, July 6, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—Since my last report as to the flow of water in the New Aqueduct the control of the gates, machinery and other appliances at the New Croton Gate-house, the Pocantico, Ardsley and South Yonkers Blow-offs, the One Hundred and Thirty-fifth Street Gate-house and the new gate-house in Central Park has been transferred to the Department of Public Works, in accordance with your resolution of June 24, 1891.

The transfer took place at the end of June 30, and I transmit for your information Mr. Birdsall's letter of July 3, in answer to mine of June 25, which was communicated to you at the last meeting of your Committee.

I am, very respectfully,

A. FTELEY, Chief Engineer.

NEW YORK, July 3, 1891.

A. FTELEY, Esq., *Chief Engineer, Aqueduct Commissioners:*

DEAR SIR—In answer to your communication of June 25, 1891, I would respectfully state that on June 30 the care and control of the several gate-houses and blow-offs was delivered over to the employees of this Department, and the supervision of same and of Aqueduct line and pipe lines will be carried on by this Department, as per the resolution of your Commissioners on June 24, 1891.

Respectfully, yours,

(Signed) G. W. BIRDSALL, Chief Engineer Croton Aqueduct.

On motion of Commissioner Tucker, the recommendation was approved.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, leave of absence, without pay, is hereby granted to Assistant Engineer Beverly R. Value, for four months from July 16 next, and until he shall be assigned to duty by the Chief Engineer.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That the action of the Chief Engineer in detailing Superintendent of Dam Construction Isaac Thomas for work at Titicus Dam, on the 2d instant, be and hereby is approved.

On motion of Commissioner Scott, the same was adopted.

The Committee also presented the claim of Solon E. Nichols for pay from the 18th to the 26th of February, 1890, while employed as an Inspector of Masonry on the New Aqueduct, and recommended the adoption of the following resolution :

Resolved, That the claim of Solon E. Nichols for pay from the 18th to the 26th of February, 1890, while employed as an Inspector of Masonry on the New Aqueduct, be and hereby is approved and ordered paid ; and the Chief Engineer is hereby directed to present a supplementary pay-roll containing the name of said Nichols for the time so claimed.

The same was adopted by the following vote :

Affirmative—The Comptroller and Commissioners Duane, Tucker, Scott and Cannon—5.

The Committee also presented the following communication received from the Chief Engineer :

NEW YORK, July 6, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—On the subject matter of the extension of time requested by Messrs. David R. Paige & Co., and of the delay in the construction of the Bog Brook Dams, reported by me to your Committee in my communication of June 30 last, I have to state as follows :

I believe that if the force employed by Messrs. David R. Paige & Co. were sufficiently increased at once, the work necessary to make it possible to fill the reservoir early next year could be performed on or before January 1, 1892.

Mr. J. J. Ridgway, of Messrs David R. Paige & Co., with whom I conferred to-day at your request, gave me such reasons as to the present slow rate of work, and such promises as to the immediate increase of the force, as to induce me to ask you to wait for further developments. I would recommend, also, that an extension of time be granted to these contractors as follows, conditional, however, on such increase of the rate of progress that the Engineer will find sufficient to finish the work within the period of the proposed extension :

The work to be so conducted that on or before January 1, 1892, the earth-work necessary for the proper filling of the reservoir shall be finished to Elevation 419, and that by February 1, 1892, the slope paving shall be finished to the same height, together with all the work which is essential for the proper and safe filling of the reservoir ; the rest of the work to be entirely completed on or before July 1, 1892.

If you decide to grant such extension, I would recommend that an agreement be entered into with Messrs. David R. Paige & Co., similar to the agreement of July 17, 1890, in connection with your grant of an extension to the said parties for the construction of the connecting tunnel, to wit : "That said contractors give to the City a sufficient guarantee that they will take, at their own cost,

such steps as will prevent any damage to their work due to the possible rising of the water behind the masonry dam on the East Branch of Croton river, caused by the orders of the Aqueduct Commissioners, or by the action of the elements; and provided, also, if any damage is done to their work from such causes, they will waive all claim for compensation on account of such damage, loss of time, or on account of other losses which they may incur from the said rising of the water."

I herewith return the papers in the case.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following preamble and resolution:

Whereas, An application has been made by David R. Paige & Co., contractors, for an extension of time in which to complete their contract for building Dams Nos. 1 and 2 on Bog Brook, and adjacent tunnel in connection with the East Branch Reservoir; and the Chief Engineer having recommended that an extension of time be granted to said contractors on the conditions referred to in the foregoing communication; therefore

Resolved, That the Aqueduct Commissioners hereby grant to David R. Paige & Co., contractors, an extension of time to January 1, 1892, in which to complete the contract above referred to, provided the bondsmen of said firm shall enter into a stipulation continuing their obligations for and during the completion of said contract under said extension of time, which is hereby allowed to them as further time for the performance of said contract; and also providing that said firm shall execute an agreement guaranteeing that the work will be so conducted that on or before January 1, 1892, the earth-work necessary for the proper filling of the reservoir shall be finished to Elevation 419, and that by February 1, 1892, the slope paving shall be finished to the same height, together with all the work which may be essential for the proper and safe filling of the reservoir, and the balance of the work to be entirely completed on or before July 1, 1892; the Aqueduct Commissioners reserving the right to cancel the extensions of time hereby granted whenever the Chief Engineer shall report in writing that the increased rate of progress, beginning with July 15, 1891, is not sufficient, in his opinion, to secure the completion of the work at the times herein mentioned; and furthermore providing that said contractors will take, at their own cost, such steps as will prevent any damage to their work due to the possible rising of the water behind the masonry dam on the East Branch of the Croton river, caused by the orders of the Commissioners, if, in the opinion of said Commissioners, it is deemed necessary for the welfare and protection of the water-supply of the City of New York to allow said water to rise behind said dam, or such injury or damage as may be caused by the action of the elements; and provided also that if any damage is done to their work by such cause, they will waive all claim for compensation on account of damage, loss of time, or on account of other losses which they may incur from the rising of said water.

The report was approved and the preamble and resolution adopted by the following vote:

Affirmative—The Comptroller, and Commissioners Duane, Tucker, Scott and Cannon—5.

The Committee also recommended the adoption of the following preamble and resolution:

Whereas, The Chief Engineer of this Commission has certified in writing, under date of July 7, 1891, that the West Point Manufacturing Company, Limited, have completely performed and car-

ried out the provisions of the contract made by them with this Commission on the 5th day of April, 1890, for building and delivering two portable hoisting plants, for use in connection with the New Aqueduct; now, therefore, be it

Resolved, That the Aqueduct Commissioners do accept the work done and materials furnished by the West Point Manufacturing Company, Limited, under the contract made by them with this Commission on the 5th day of April, 1890, for building and delivering two portable hoisting plants for use in connection with the New Aqueduct, and that a proper voucher for the final payment for work done and materials furnished under said contract be approved by the Aqueduct Commissioners, and certified to the Comptroller for payment; and the Comptroller is hereby requested to pay the amount of said final estimate without any deduction for overtime.

On motion of the Comptroller, the same were laid on the table.

The Committee also presented the following report, received from the Secretary, together with a draft of a letter to be signed by the President of the Aqueduct Commission, and recommended that said report be spread in full on the minutes and filed, and that the letter referred to be signed by the President and transmitted to the Board of Estimate and Apportionment:

NEW YORK, July 7, 1891.

To the Committee on Construction:

GENTLEMEN—At a meeting of the Aqueduct Commissioners, held on July 1, 1891, the following preambles and resolution adopted by the Board of Estimate and Apportionment, on July 1, 1891, were considered and the same referred to the Construction or Executive Committee, and the Secretary and Chief Engineer directed to furnish to said Committee, at its next meeting, the information necessary to prepare an answer to the Board of Estimate and Apportionment:

"Whereas, The Chief Engineer of the Aqueduct Commissioners having notified the Chief Engineer of the Croton Aqueduct, of the Department of Public Works, that the services of the employees of the Aqueduct Commissioners in charge of the maintenance would cease on June 30, 1891; and

"Whereas, By section 41, chapter 490, Laws of 1883, the Aqueduct Commissioners are authorized to employ all necessary employees, subject to the approval of the Board of Estimate and Apportionment; therefore

"Resolved, That, with the view of this Board complying with the provision of the statute referred to, the said Aqueduct Commissioners are hereby requested to furnish forthwith to this Board a statement of all their employees, specifying the duties attended to or services performed by each such employee and the place where such duties are attended to or services are performed, and specifying the particular employees it is considered by the said Commissioners necessary to be continued in their employment after the care of the Aqueduct is transferred to the Department of Public Works."

In compliance with such direction, I respectfully report that the employees of the Secretary's office are as follows:

Secretary, John C. Sheehan, salary, $4,000 per annum.

Performs all duties appertaining to the office of Secretary of the Commission and its Committees and such duties are attended to at the office of the Aqueduct Commissioners or such other place as may be required by the Aqueduct Commissioners.

Auditor, J. C. Lulley, salary, $2,500 per annum.

All accounts, vouchers, pay-rolls and claims of any kind for or against the Aqueduct Commission are examined, passed upon and audited by the Auditor before the same are presented to the Commissioners for their action and before certifying the same to the Comptroller for payment.

Purveyor, William W. Proctor; salary, $2,000 per annum.

The Purveyor purchases all material of any kind required by the Aqueduct Commission, and, in addition to such duties, he has been performing the duties of Paymaster, under the Weekly Payment Act. Two days of each week are thus used in paying the Laborers and others employed on the line of the Aqueduct, its dams and appurtenances. In addition to said duties, he has charge of the engrossing and indexing of the minutes of the Construction Committee of the Aqueduct Commissioners.

Bookkeeper, Charles J. Febre; salary, $1,800 per annum.

Stenographer and Clerk, Edward L. Allen; salary, $1,650 per annum. Mr. Allen is employed as Stenographer to the Commission and all its different Committees. He is also employed as General Clerk and Typewriter as well.

Jefferson Groub; salary, $1,000 per annum. Employed as General Clerk.

Herrmann Blumenthal; salary, $1,000 per annum. Employed as General Clerk and has charge of the engrossing and indexing of the minutes of the different meetings of the Aqueduct Commissioners.

F. H. Warder; salary, $900 per annum. Employed as Clerk and Typewriter.

John P. R. Taaffe, Rodman; salary, $75 per month. Temporarily assigned to the Secretary's office to do clerical duties and to assist in catching up back work.

Henry A. Cantor, Axeman, salary $60 per month. Temporarily assigned to the Secretary's office to perform the duties of Messenger in the absence of Messenger John R. Vernam, absent on leave without pay.

As required by section 41 of chapter 490 of the Laws of 1883, the employment of said parties has been approved by the Board of Estimate and Apportionment; and the Corporation Counsel, under date of August 7, 1884, advises the Aqueduct Commissioners that the Aqueduct Act, as a whole, contemplates that the various persons whose services are required to enable the Aqueduct Commissioners to discharge their functions shall be selected and appointed and their compensation fixed by the Aqueduct Commissioners; and that after receiving the approval of the Board of Estimate and Apportionment, as above referred to, the power of said Board of Estimate and Apportionment in the premises ceased.

Respectfully,

JOHN C. SHEEHAN, Secretary.

NEW YORK, July 8, 1891.

To the Board of Estimate and Apportionment:

GENTLEMEN—The Aqueduct Commission is in receipt of a copy of certain preambles and a resolution adopted by your Board on July 1, 1891, calling upon this Commission for a list of its employees. One of the preambles refers to section 41 of the Aqueduct Act (Chapter 490, Laws of 1883), and the resolution seems to contemplate some duty as resting upon your Board by reason of that section.

I am instructed by the Aqueduct Commission to transmit to you the annexed copy of a report of the Secretary of this Commission containing a list of all the Clerks, Messengers and employees appointed pursuant to the provisions of the section referred to.

By order of the Aqueduct Commission,

President.

On motion of Commissioner Scott, the report was approved and the recommendation therein contained adopted.

The Committee of Finance and Audit reported their examination and audit of bills contained in Vouchers Nos. 7108 to 7124, inclusive, amounting to $455.32.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

On motion of Commissioner Cannon, the minutes of stated meeting of June 24, 1891, were ordered approved.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, July 15, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

The Committee of Finance and Audit reported their examination and audit of Vouchers Nos. 7127 to 7139, inclusive, being estimates for work done by contractors, amounting to $31,460.82; also of bills contained in Vouchers Nos. 7140 to 7151, inclusive, amounting to $1,274.17.

On motion of Commissioner Tucker, the same were approved, and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the resignation of Deputy Chief Engineer George S. Rice, and recommended the adoption of the following resolution:

Resolved, That in accepting the resignation of Deputy Chief Engineer George S. Rice the Aqueduct Commissioners desire to place on record their high appreciation of the value of his services to the City and of his unfailing loyalty and devotion to the duties entrusted to him. He has been unflagging in his industry, energetic and persistent in the discharge of the functions of his office, and has earned the good wishes of all who have been associated with him in the work of this Commission.

On motion of Commissioner Scott, the resignation was accepted and the resolution adopted.

The Committee also recommended the adoption of the following preamble and resolution:

Whereas, In the opinion of the Aqueduct Commissioners the further sum of five hundred thousand dollars will be required to defray the necessary and lawful current expenditures of said Commissioners; now, therefore, be it

Resolved, That the Comptroller of the City of New York be and he is hereby requested to raise the sum of five hundred thousand dollars upon bonds of the City of New York, in conformity

with the requirements of section 32, chapter 490, Laws of 1883, of the State of New York, for the uses and purposes of the Aqueduct Commissioners, as set forth in said chapter and section of said law.

The same were adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also presented the resignation of Rodman R. A. Reinisch, and recommended that the same be accepted, to take affect as of the 14th instant.

On motion of Commissioner Scott, the same was accepted.

The Committee also presented the following communication, received from the Chief Engineer :

NEW YORK, July 14, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—The services of W. T. Giles, Machinist, can be dispensed with from July 13, and I have suspended him from that date. This is to ask for your approval and his discharge. Mr. Giles has been personally notified by Foreman Gillespie.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution :

Resolved, That the above action of the Chief Engineer be and hereby is approved, and the services of said Giles are hereby dispensed with.

On motion of Commissioner Tucker, the report was approved and the resolution adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, the accompanying bill of Albert S. Travis for damage done to his property by members of the Engineer Corps in making surveys and soundings in the neighborhood of the Cornell's dam site, amounting to twenty-five dollars, be and hereby is approved and ordered paid.

The same was adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also presented the following list of bidders for doing the work of finishing Shaft No. 21 of the New Aqueduct :

William H. Baker	$1,738 50
Dennis Murphy	1.917 50
Peter F. McAtee	2,062 50
John M. Waddle	2,606 50
James Hart	2,725 00

—and recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, the contract for doing the work of finishing Shaft No. 21 of the New Aqueduct be and hereby is awarded to William H.

Baker at his bid of one thousand seven hundred and thirty-eight dollars and fifty cents, it being the lowest bid received for doing said work.

The same was adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The following preamble and resolution, laid on the table at the last meeting, were taken from the table and read :

Whereas, The Chief Engineer of this Commission has certified in writing, under date of July 7, 1891, that the West Point Manufacturing Company, Limited, have completely performed and carried out the provisions of the contract made by them with this Commission on the 5th day of April, 1890, for building and delivering two portable hoisting plants for use in connection with the New Aqueduct ; now, therefore, be it

Resolved, That the Aqueduct Commissioners do accept the work done and materials furnished by the West Point Manufacturing Company, Limited, under the contract made by them with this Commission on the 5th day of April, 1890, for building and delivering two portable hoisting plants, for use in connection with the New Aqueduct, and that a proper voucher for the final payment for work done and materials furnished under said contract be approved by the Aqueduct Commissioners, and certified to the Comptroller for payment ; and the Comptroller is hereby requested to pay the amount of said final estimate without any deduction for overtime.

The same were then adopted by the following vote :

Affirmative –Commissioners Duane, Tucker, Scott and Cannon—4.

The Secretary gave notice of the filing of a lien by James Reynolds against Terence A. Smith and Toney Dandrea & Co. for work done in connection with the building of a stone wall on the pipe line between Washington Bridge and High Bridge, amounting to $105.25.

On motion of Commissioner Scott, the same was ordered filed.

On motion of Commissioner Scott, the position of Deputy Chief Engineer in the Engineer Corps was abolished.

On motion of Commissioner Scott, the minutes of stated meeting of July 1, 1891, were ordered approved.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, July 22, 1891, at 3 o'clock P. M.

Present—The Comptroller, and Commissioners Duane, Tucker, Scott and Cannon.

In the absence of the Secretary, Auditor J. C. Lulley acted as Secretary pro tem.

The Committee of Finance and Audit reported their examination and audit of bills contained in Vouchers Nos. 7155 to 7167, inclusive, amounting to $415.39.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee recommended the adoption of the following resolution:

Resolved, That the action of the Chief Engineer in notifying Mrs. Flora M. Bowers, temporarily employed as Typewriter in the office of Division Engineer Craven, at Yonkers, that her services would not be required after July 15, 1891, be and hereby is approved; and her services are hereby dispensed with as of said date.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following resolution:

Resolved, That the action of the Chief Engineer in assigning Superintendent of Dam Construction Gerald McMurray to work at Carmel, under Division Engineer Craven, on the 21st instant, be and hereby is approved.

On motion of Commissioner Tucker, the same was adopted.

The Committee also presented the following report, received from the Secretary, and recommended that the same be spread in full on the minutes and filed:

NEW YORK, July 20, 1891.

To the Committee on Construction:

GENTLEMEN—I submit herewith a statement showing the number of persons employed as Inspectors of Masonry during the construction of the New Aqueduct; date when appointed, and when suspended or discharged; also date of signing agreements required by the Aqueduct Commissioners waiving pay during such time as they might be under suspension. It appears from such statement that the whole number of persons employed as Inspectors during the construction of the New Aqueduct amounted to 307, of which number 11 are now in the employ of the Commission. Since the organization of the Aqueduct Commission the Commissioners have exercised the right of suspension in case of neglect of duty or a violation of the rules and regulations by Inspectors and other employees.

Early in the history of the present Commission the question of the suspension of Inspectors of Masonry was thoroughly considered, and in view of the fact that the Court of Appeals has recently held, in the case of Albert Emmitt vs. The Mayor, etc., of the City of New York, that Inspectors were entitled to pay until discharged, and that temporary or indefinite suspension without pay was not within the powers of the Aqueduct Commissioners, I have thought it proper at this time to show the action of the Commissioners with reference to suspensions, and the steps taken by them to protect the City against loss owing to any such suspensions.

On January 2, 1889, the following communication was addressed by the Aqueduct Commissioners to Henry R. Beekman, Counsel to the Corporation:

NEW YORK, January 2, 1889.

Hon. HENRY R. BEEKMAN, *Counsel to the Corporation:*

SIR—The Aqueduct Commissioners would respectfully ask an opinion for their guidance upon the question of pay for Inspectors and other employees on the New Aqueduct, engaged by the month, at a monthly compensation, during periods for which they may have been suspended from work.

Following is an extract from the minutes of the Construction Committee of December 13, 1888:

"A communication was received from the Secretary, stating that in compliance with the directions of the Committee he had examined into the matter of the claim made by Inspector of Masonry Albert Emmitt, to be allowed pay for the time during which he was under suspension, from April 20 to June 9, 1888, and, on motion of Commissioner Howe, the Secretary was directed to prepare a statement with reference to the claims made by Edward Fitzgerald and Thomas J. Fallon, recently employed as Inspectors of Masonry, to be allowed pay for the time during which they were under suspension, and that the same, together with the report referring to the claim of Albert Emmitt, and all other papers in connection with the claims made by said parties, be referred to the Counsel to the Corporation for his opinion thereon."

In pursuance of the foregoing extract there is transmitted herewith a report of the Secretary, dated December 27, 1888, containing a statement of the facts in reference to each of the suspended Inspectors, whose claims are herewith referred to you for an opinion upon their validity. There is also transmitted herewith a copy of the rules and regulations defining the duties of Inspectors and Superintending Inspectors on the New Aqueduct.

It appears to have been the custom of this Board, in case of neglect of duty or violation of the rules and regulations by Inspectors or other employees, to suspend them from duty awaiting an inquiry into the merits of their case.

It does not appear that there ever was any rule of the Board providing explicitly that a suspension from duty should be without pay, although, as a matter of fact, pay was not allowed by the former Commissioners to an Inspector for the time during which he was suspended, and it was generally understood by the Board and its employees that pay would not be certified for periods when such employees were actually off duty, excepting only when such absences were for sickness attested by a physician's certificate, or in special cases on leave granted. The notices of suspension given to such employees in some cases stated that such suspension was without pay, and in other cases omitted to say whether suspension was or was not without pay.

The contention of the suspended Inspectors now is, that their contract of employment was not terminated by any order of suspension and is never terminated until they resign or are dismissed.

The basis of the action of the Commissioners in refusing to audit and allow claims for pay during suspension is found in a resolution of the Board, adopted on the 4th day of January, 1888, of which all of the employees of the Board were duly notified, which resolution is as follows:

"Resolved, That on and after January 1 all Inspectors employed by the Aqueduct Commissioners are only to be paid for the time they are on duty on the work; and in case any Inspector, after once having been suspended, or transferred, for inefficiency or improper conduct, should again

be complained of by the Division Engineer in charge, said Division Engineer shall give him his time and report the name of said Inspector for discharge by the Commissioners."

The questions to which this Board now desires an answer are as follows:

1st. Whether the Commissioners have power to suspend an Inspector or other employee engaged upon a monthly salary, for neglect of duty or other cause, and stop payment of the salary of such employee during the period of such suspension.

2d. Whether upon the facts presented, the Inspectors heretofore suspended are entitled to be paid for the period of their suspension respectively.

* * * * * * * *

Very respectfully,
J. C. DUANE, President.

To which the Corporation Counsel replied, under date of January 12, 1889, that each Inspector who accepted an appointment from the Aqueduct Commissioners after the adoption of certain rules and regulations which were presented to the Corporation Counsel must be held to have contracted for the performance of his duties in accordance with and in subordination to all the provisions embodied therein; and that as one of these rules provided that all Inspectors should be employed and paid by the month, he was of the opinion that prior to January 1, 1888, the utmost that any Inspector would be entitled to claim under the decision in the case of Gregory vs. The Mayor, is that where he was suspended after the day of the month upon which his employment commenced or was renewed, he should receive his pay only for the remainder of the month, assuming that his suspension continued for so long a period, and that as the employment of Inspectors was to be for one month only, no discharge was necessary at the expiration of that period in order to dismiss him from the public service. Furthermore, that in the cases of suspensions which have taken place since January 1, 1888, the contract between the Inspectors and the Aqueduct Commissioners had been modified by the resolution adopted on January 4, 1888, and that the effect of this resolution was virtually to condition the right of Inspectors to receive compensation upon their presence in the performance of their duty at the place where said duty was to be performed. Prior to submitting this matter to the Corporation Counsel the Commissioners had taken other precautions to protect the City, and required that each Inspector of Masonry should enter into an agreement waiving pay for such time as they might be under suspension; and in order to provide against any question as to their right to execute such an agreemen tthe matter was submitted to the Corporation Counsel, and, under date of May 28, 1889, concerning said matter they were advised as follows:

LAW DEPARTMENT,
OFFICE OF THE COUNSEL TO THE CORPORATION,
NEW YORK, May 28, 1889.

JOHN C. SHEEHAN, Esq., *Secretary, Aqueduct Commission:*

SIR—Under date May 2, 1889, you inclosed a form of agreement which the Aqueduct Commissioners require all Inspectors of Masonry employed by them to sign. The agreement, among other things, provides that the pay of Inspectors shall cease from and after the time of their suspension for any cause while in the employ of the Commissioners.

The Commissioners inquire whether the recent decision of the Court of Appeals, in the case of Gregory vs. The Mayor, in any way affects the right of the Commissioners to require the execution of such an agreement, and whether anything further should be added to the form now in use.

I inclose for the information of the Commissioners a printed copy of the opinion of the Court of Appeals.

I see nothing in the opinion which affects the right of the Commissioners to require of the Inspectors employed by them the execution of the agreement; neither have I any addition to the form of the agreement to suggest.

I am sir, respectfully yours,
WM. H. CLARK, Counsel to the Corporation.

With reference to said agreement, the decision of the Court of Appeals is to the effect that Inspectors are entitled to recover the compensation fixed by the Aqueduct Commissioners while they remain in office, but that where they subsequently agreed that if suspended by the Aqueduct Commissioners pay should cease from that time, the agreement constituted a waiver, and was a regulation as to compensation, and was perfectly competent and lawful.

An examination of the accompanying statement will show that in most cases the claims made by Inspectors of Masonry are disposed of owing to the fact that the agreement herein referred to was signed prior to the date of suspension.

Respectfully submitted,

(Signed) JOHN C. SHEEHAN, Secretary.

N. B.—Of the number of inspectors dismissed by the Commissioners fifty-one (51) did not sign the agreement above referred to. J. C. S.

On motion of Commissioner Cannon, the recommendation was approved.

The Committee also presented duplicate final plan sheets, described as "Exhibit No. 3, of 1891," submitted by the Commissioner of Public Works on July 15, 1891, showing certain additional parcels of land required for the construction of Reservoir "M," in the Town of North Salem, Westchester County, New York, and recommended the adoption of the following resolution:

Resolved, That for the more efficient carrying out of the provisions of chapter 490 of the Laws of 1883, and the acts amendatory thereof, we, the Aqueduct Commissioners, do hereby approve and adopt the aforesaid final plan sheets, showing lands required for the construction of said Reservoir "M," and direct that the same be duly certified and filed in this office, and designated "Final Plan Sheet No. 1, of 1891," and that a copy thereof be certified and transmitted to the Commissioner of Public Works for filing in his office, as required by section 2 of the aforesaid act; and the Commissioner of Public Works is hereby requested to submit the six similar property maps describing lands to be acquired for the construction of said reservoir.

On motion of Commissioner Scott, the same was adopted.

The Secretary presented the following:

CITY OF NEW YORK—FINANCE DEPARTMENT,
COMPTROLLER'S OFFICE,
July 22, 1891.

J. C. SHEEHAN, Esq., *Secretary*:

DEAR SIR—During the months of June and July to date the following Additional Water Stock has been issued, viz.:

June 5	$50,000 00
June 26	100,000 00
July 21	100,000 00

Interest three per cent., taken by the Commissioners of the Sinking Fund at par.

Respectfully,

I. S. BARRETT, General Bookkeeper.

Which was ordered entered upon the books of the Commission and filed.

The Comptroller, under date of June 30, 1891, gave notice of the issue of warrants for the payment of vouchers not certified to by the Aqueduct Commissioners, for—

Westchester County Section	$917 70
Westchester County Section, additional lands	324 00
Sodom Dam and Reservoir	614 28
Reservoir "M"	212 75
Manhattan Island Section, additional lands	319 79
New York Section	142 80
Manhattan Island Section	20 70
Reservoir "D"	347 90
Reservoir "M"	126 37

—leaving a balance to the credit of "Additional Water Fund" of $20,162.12.

Which were ordered entered upon the books of the Commission and filed.

On motion of Commissioner Scott, the following preamble and resolution, adopted by the Commissioners on July 8, 1891, were reconsidered and laid on the table:

Whereas, An application has been made by David R. Paige & Co., contractors, for an extension of time in which to complete their contract for building Dams Nos. 1 and 2 on Bog Brook, and adjacent tunnel in connection with the East Branch Reservoir; and the Chief Engineer having recommended that an extension of time be granted to said contractors on the conditions referred to in the foregoing communication; therefore

Resolved, That the Aqueduct Commissioners hereby grant to David R. Paige & Co., contractors, an extension of time to January 1, 1892, in which to complete the contract above referred to, provided the bondsmen of said firm shall enter into a stipulation continuing their obligations for and during the completion of said contract under said extension of time, which is hereby allowed to them as further time for the performance of said contract; and also providing that said firm shall execute an agreement guaranteeing that the work will be so conducted that on or before January 1, 1892, the earth-work necessary for the proper filling of the reservoir shall be finished to Elevation 419, and that by February 1, 1892, the slope paving shall be finished to the same height, together with all the work which may be essential for the proper and safe filling of the reservoir, and the balance of the work to be entirely completed on or before July 1, 1892; the Aqueduct Commissioners reserving the right to cancel the extensions of time hereby granted whenever the Chief Engineer shall report in writing that the increased rate of progress, beginning with July 15, 1891, is not sufficient, in his opinion, to secure the completion of the work at the times herein mentioned; and furthermore providing that said contractors will take, at their own cost, such steps as will prevent any damage to their work due to the possible rising of the water behind the masonry dam on the East Branch of the Croton river, caused by the orders of the Commissioners, if, in the opinion of said Commissioners, it is deemed necessary for the welfare and protection of the water-supply of the City of New York to allow said water to rise behind said dam, or such injury or damage as may be caused by the action of the elements; and provided also that if any damage is done to their

work by such cause, they will waive all claim for compensation on account of damage, loss of time, or on account of other losses which they may incur from the rising of said water.

On motion of Commissioner Cannon, the minutes of stated meetings of July 8 and 15, 1891, were ordered approved.

The Commissioners then adjourned.

J. C. LULLEY, Secretary pro tem.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, July 29, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

In the absence of the Secretary, Auditor J. C. Lulley acted as Secretary pro tem.

The Construction or Executive Committee presented the following :

The Construction or Executive Committee report :

That at a meeting of said Committee, held on July 28, 1891, the following resolution was adopted, and they now ask your approval of their said action :

"Resolved, That the bid-box be closed, and the keys given to the President ; and that the Secretary pro tem., Auditor J. C. Lulley, be authorized by this Commission to receive the bids for constructing a highway, retaining-walls, appurtenances, etc., at Croton Dam, in the Town of Yorktown, Westchester County, New York, as called for in the approved forms of contract and specifications on file in the office of the Aqueduct Commissioners ; also to receive the checks of the bidders, and to make the necessary preparations for opening the bids received for doing said work under the law."

On motion of Commissioner Scott, said action was approved.

In pursuance to the following notice, published daily for fifteen consecutive days, commencing with July 11, 1891, in the CITY RECORD, New York "Tribune" and "Morning Advertiser," bids were received for constructing a highway, retaining-walls, appurtenances, etc., at Croton Dam, in the Town of Yorktown, Westchester County, New York :

AQUEDUCT COMMISSIONERS' OFFICE,
ROOM 209, STEWART BUILDING, No. 280 BROADWAY,
NEW YORK, July 11, 1891.

To Contractors.

Bids or proposals for constructing a highway, retaining-walls, appurtenances, etc., at Croton Dam, in the Town of Yorktown, Westchester County, New York, as called for in the approved forms of contract and specifications on file in the office of the Aqueduct Commissioners, will be

received at this office until 3 o'clock P. M. on Wednesday, July 29, 1891, at which place and hour they will be publicly opened by the Aqueduct Commissioners, and the award for doing said work will be made by said Commissioners as soon thereafter as possible.

Blank forms of contract and specifications for doing said work, and bids or proposals, and proper envelopes for their inclosure, can be obtained at the above office of the Aqueduct Commissioners on application to the Secretary.

By order of the Aqueduct Commissioners.

JAMES C. DUANE, President.

JOHN C. SHEEHAN, Secretary.

The following bids, upon which the required deposits had been made, were then opened and read aloud by the Secretary:

No. 1. Dennis Murphy	$29,640 00
No. 2. Rider & Dougherty	18,830 00
No. 3. P. J. Moran	35,835 00
No. 4. William H. Baker	19,120 50
No. 5. Flagler & Buckley	19,737 50
No. 6. A. M. Newton	17,573 75
No. 7. Smith, Brown & Coleman	24,625 00
No. 8. James Hart	24,025 00

Whereupon, on motion of Commissioner Scott, the following preamble and resolution were adopted:

Whereas, Bids for constructing a highway, retaining-walls, appurtenances, etc., at Croton Dam, in the Town of Yorktown, Westchester County, New York, having been received and publicly opened and read; therefore

Resolved, That the Chief Engineer is hereby directed to have said bids calculated and tabulated, and submit the same, together with his estimates of the work, at a meeting of the Construction or Executive Committee of the Aqueduct Commissioners, for consideration and canvassing by them at 3 o'clock P. M. on the 30th day of July, 1891, and the bids and checks of the bidders are hereby referred to the Committee of Finance and Audit for examination and report to the Commissioners as to their formality and the sufficiency of the sureties proposed by the bidders.

The Committee of Finance and Audit reported their examination and audit of bills contained in Vouchers Nos. 7168 to 7180, inclusive, amounting to $329.62.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee recommended the adoption of the following resolution:

Resolved, That the action of the Chief Engineer, in assigning Superintendent of Dam Construction George L. Tillotson to duty on this date, for work at Titicus Dam under Division Engineer Gowen, be and hereby is approved.

On motion of Commissioner Tucker, the same was adopted.

The Committee also presented the following :

The Construction or Executive Committee report :

That at a meeting of the Committee, held on July 28, 1891, the following preamble and resolution was adopted, and directed to be served upon the contractors therein named :

" Whereas, The contract for building Dams Nos. 1 and 2, on Bog brook, and adjacent tunnel in connection with the East Branch Reservoir, provides that 'if at any time the Engineer shall be of opinion, and shall so certify in writing to the said Aqueduct Commissioners, that the said work or any part thereof, is unnecessarily or unreasonably delayed, or that the said contractor is violating any of the conditions or covenants of this contract, or executing said contract in bad faith, or if the work to be done under this contract be not fully and entirely completed within the time herein stipulated for its completion, the said Aqueduct Commissioners shall have the power to notify the aforesaid contractor to discontinue all work, or any part thereof, under this contract; and, thereupon the said contractor shall discontinue said work, or such part thereof as the said Aqueduct Commissioners may designate, and the said Aqueduct Commissioners shall thereupon have the power to place such and so many persons, and obtain by purchase or hire, such materials, animals, carts, wagons, implements and tools, by contract or otherwise, as said Aqueduct Commissioners deem necessary to complete the work herein described, or such part thereof, and to procure materials for the completion of the same, and to charge the expense of said labor and materials, animals, carts, wagons, implements and tools to the aforesaid contractor; and the expense so charged shall be deducted and paid by the parties of the first part out of such moneys as either may be due or may at any time thereafter become due to the said contractor under and by virtue of this agreement, or any part thereof;' and it appearing by a report submitted by the Chief Engineer to this Committee that the work of construction of said dams is being unnecessarily and unnreasonably delayed, and this Committee being satisfied that such is the case ; therefore

" Resolved, That David R. Paige & Co., contractors for the construction of said dams, are hereby required to show cause, at a meeting of the Aqueduct Commissioners, to be held at the office of said Commissioners on Thursday next, July 30, 1891, at 3 o'clock P. M., why the work of construction of said dams should not be discontinued and the further completion of said work done under the direction of the Aqueduct Commissioners, as provided in clause P of the contract for the construction of said dams."

The report was approved by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also presented the following :

The Construction or Executive Committee report :

That at a meeting of the Committee, held on July 28, 1891, the following preamble and resolution was adopted, and directed to be served upon the contractor therein named :

" Whereas, The contract for the building of an earth and masonry dam for Reservoir 'D,' on the West Branch of Croton river, near Carmel, New York, provides that 'if at any time the Engineer shall be of opinion, and shall so certify in writing to the Aqueduct Commissioners, that the said

work or any part thereof is unnecessarily or unreasonably delayed, or that the said contractor is violating any of the conditions or covenants of this contract, or executing said contract in bad faith, or if the work to be done under this contract be not fully and entirely completed within the time stipulated for its completion, the said Aqueduct Commissioners shall have the power to notify the aforesaid contractor to discontinue all work, or any part thereof, under this contract, by a written notice to be served on the contractor, either personally, or by leaving it at his residence, or with his agent in charge of the work: and thereupon the said contractor shall discontinue said work, or such part thereof as said Aqueduct Commissioners may designate, and the said Aqueduct Commissioners shall thereupon have the power to place such and so many persons, and obtain by purchase or hire such materials, animals, carts, wagons, implements and tools, by contract or otherwise, as said Aqueduct Commissioners deem necessary to complete the work herein described, or such part thereof; and to procure materials for the completion of the same, and to charge the expense of said labor and materials, animals, carts, wagons, implements and tools to the aforesaid contractor; and the expense so charged shall be deducted and paid by the parties of the first part out of such moneys as either may be due or may at any time thereafter become due to the said contractor under and by virtue of this agreement, or any part thereof;' and it appearing by a report submitted by the Chief Engineer to this Committee that the work of construction of said dam is being unnecessarily and unreasonably delayed, and this Committee being satisfied that such is the case; therefore

"Resolved, That Michael S. Coleman, contractor for the construction of said dam, is hereby required to show cause, at a meeting of the Aqueduct Commissioners, to be held at the office of said Commissioners on Thursday next, July 30, 1891, at 3 o'clock P. M., why the work of construction of said dam should not be discontinued and the further completion of said work done under the direction of the Aqueduct Commissioners, as provided in Clause P of the contract for the construction of said dam."

The report was approved by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also presented the following:

The Construction or Executive Committee report:

That at a meeting of the Committee, held on July 28, 1891, the following preamble and resolution was adopted, and directed to be served upon the contractor therein named:

"Whereas, The contract for building an auxiliary earth and masonry dam near Craft's Station, for Reservoir 'D,' Town of Carmel, Putnam County, New York, provides that 'if at any time the Engineer shall be of opinion, and shall so certify, in writing to the said Aqueduct Commissioners, that the said work or any part thereof is unnecessarily or unreasonably delayed, or that the said contractor is violating any of the conditions or covenants of this contract, or executing the same in bad faith, or if the work to be done under this contract be not fully and entirely completed within the time herein stipulated for its completion, the said Aqueduct Commissioners shall have the power to notify the aforesaid contractor to discontinue all work, or any part thereof, under this contract, by a written notice to be served on the contractor, either personally or by leaving it at his residence, or with his agent in charge of the work; and thereupon the said contractor shall discontinue said work, or such part thereof as said Commissioners may designate, and the said Aqueduct Com-

missioners shall thereupon have the power to place such and so many persons, and obtain by purchase or hire such materials, animals, carts, wagons, implements and tools by contract or otherwise, as the said Aqueduct Commissioners deem necessary to complete the work herein described, or such part thereof, and to procure materials for the completion of the same, and to charge the expense of said labor and materials, animals, carts, wagons, implements and tools to the aforesaid contractor; and the expense so charged shall be deducted and paid by the parties of the first part out of such moneys as either may be due or may at any time thereafter become due to the said contractor under and by virtue of this agreement or any part thereof;' and it appearing by a report submitted by the Chief Engineer to this Committee that the work of construction of said dam is being unnecessarily and unreasonably delayed, and this Committee being satisfied that such is the case; therefore

"Resolved, That Michael S. Coleman, contractor for the construction of said dam, is hereby required to show cause, at a meeting of the Aqueduct Commissioners, to be held at the office of said Commissioners on Thursday next, July 30, 1891, at 3 o'clock P. M., why the work of construction of said dam should not be discontinued and the further completion of said work done under the direction of the Aqueduct Commissioners, as provided in clause P of the contract for the construction of said dam."

The report was approved by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also recommended the adoption of the following preambles and resolution:

Whereas, The contract for Section 16 of the New Aqueduct provides, among other things, as follows:

"The parties of the second part hereby agree that the said parties of the first part shall be and they hereby are authorized and empowered to retain out of the final installment of money which shall become due and payable to the said parties of the second part under this agreement, a sum equal to five per centum of the whole amount of money payable by the parties of the first part to the parties of the second part under and according to the terms of this contract, and to expend the same in the manner hereinafter provided for, in making such repairs to the gates, stop-cocks, pipes, branch pipes and special castings laid and set, and pavement and other work done under this contract, as the Aqueduct Commissioners may deem necessary.

"And it is further agreed, that if at any time during the performance of the work herein agreed to be performed, or during the period of one year from the date of the final completion and acceptance of the same, stop-cocks, pipes, branch pipes, or special castings or their connections, or the embankments, culverts, or mason work, or any of them, laid, set or constructed under this agreement, or the pavements and roadways, or other places which may have been disturbed in such laying, setting or construction, shall, in the opinion of said Aqueduct Commissioners, require to be recaulked, reset, reconstructed, regraded or repaired, the said Aqueduct Commissioners shall notify the said parties of the second part, in writing, to make such repairs, and if the said parties of the second part shall neglect to commence the work of making such repairs and prosecute the same to the satisfaction of the Aqueduct Commissioners within twenty-four hours from the date of the service of such notice, then and in every such case the said Aqueduct Commissioners shall have the right to

work or any part thereof is unnecessarily or unreasonably delayed, or that the said contractor is violating any of the conditions or covenants of this contract, or executing said contract in bad faith, or if the work to be done under this contract be not fully and entirely completed within the time stipulated for its completion, the said Aqueduct Commissioners shall have the power to notify the aforesaid contractor to discontinue all work, or any part thereof, under this contract, by a written notice to be served on the contractor, either personally, or by leaving it at his residence, or with his agent in charge of the work ; and thereupon the said contractor shall discontinue said work, or such part thereof as said Aqueduct Commissioners may designate, and the said Aqueduct Commissioners shall thereupon have the power to place such and so many persons, and obtain by purchase or hire such materials, animals, carts, wagons, implements and tools, by contract or otherwise, as said Aqueduct Commissioners deem necessary to complete the work herein described, or such part thereof ; and to procure materials for the completion of the same, and to charge the expense of said labor and materials, animals, carts, wagons, implements and tools to the aforesaid contractor ; and the expense so charged shall be deducted and paid by the parties of the first part out of such moneys as either may be due or may at any time thereafter become due to the said contractor under and by virtue of this agreement, or any part thereof ;' and it appearing by a report submitted by the Chief Engineer to this Committee that the work of construction of said dam is being unnecessarily and unreasonably delayed, and this Committee being satisfied that such is the case ; therefore

"Resolved, That Michael S. Coleman, contractor for the construction of said dam, is hereby required to show cause, at a meeting of the Aqueduct Commissioners, to be held at the office of said Commissioners on Thursday next, July 30, 1891, at 3 o'clock P. M., why the work of construction of said dam should not be discontinued and the further completion of said work done under the direction of the Aqueduct Commissioners, as provided in Clause P of the contract for the construction of said dam."

The report was approved by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also presented the following :

The Construction or Executive Committee report :

That at a meeting of the Committee, held on July 28, 1891, the following preamble and resolution was adopted, and directed to be served upon the contractor therein named :

"Whereas, The contract for building an auxiliary earth and masonry dam near Craft's Station, for Reservoir 'D,' Town of Carmel, Putnam County, New York, provides that 'if at any time the Engineer shall be of opinion, and shall so certify, in writing to the said Aqueduct Commissioners, that the said work or any part thereof is unnecessarily or unreasonably delayed, or that the said contractor is violating any of the conditions or covenants of this contract, or executing the same in bad faith, or if the work to be done under this contract be not fully and entirely completed within the time herein stipulated for its completion, the said Aqueduct Commissioners shall have the power to notify the aforesaid contractor to discontinue all work, or any part thereof, under this contract, by a written notice to be served on the contractor, either personally or by leaving it at his residence, or with his agent in charge of the work ; and thereupon the said contractor shall discontinue said work, or such part thereof as said Commissioners may designate, and the said Aqueduct Com-

missioners shall thereupon have the power to place such and so many persons, and obtain by purchase or hire such materials, animals, carts, wagons, implements and tools by contract or otherwise, as the said Aqueduct Commissioners deem necessary to complete the work herein described, or such part thereof, and to procure materials for the completion of the same, and to charge the expense of said labor and materials, animals, carts, wagons, implements and tools to the aforesaid contractor; and the expense so charged shall be deducted and paid by the parties of the first part out of such moneys as either may be due or may at any time thereafter become due to the said contractor under and by virtue of this agreement or any part thereof;' and it appearing by a report submitted by the Chief Engineer to this Committee that the work of construction of said dam is being unnecessarily and unreasonably delayed, and this Committee being satisfied that such is the case; therefore

"Resolved, That Michael S. Coleman, contractor for the construction of said dam, is hereby required to show cause, at a meeting of the Aqueduct Commissioners, to be held at the office of said Commissioners on Thursday next, July 30, 1891, at 3 o'clock P. M., why the work of construction of said dam should not be discontinued and the further completion of said work done under the direction of the Aqueduct Commissioners, as provided in clause P of the contract for the construction of said dam."

The report was approved by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also recommended the adoption of the following preambles and resolution:

Whereas, The contract for Section 16 of the New Aqueduct provides, among other things, as follows:

"The parties of the second part hereby agree that the said parties of the first part shall be and they hereby are authorized and empowered to retain out of the final installment of money which shall become due and payable to the said parties of the second part under this agreement, a sum equal to five per centum of the whole amount of money payable by the parties of the first part to the parties of the second part under and according to the terms of this contract, and to expend the same in the manner hereinafter provided for, in making such repairs to the gates, stop-cocks, pipes, branch pipes and special castings laid and set, and pavement and other work done under this contract, as the Aqueduct Commissioners may deem necessary.

"And it is further agreed, that if at any time during the performance of the work herein agreed to be performed, or during the period of one year from the date of the final completion and acceptance of the same, stop-cocks, pipes, branch pipes, or special castings or their connections, or the embankments, culverts, or mason work, or any of them, laid, set or constructed under this agreement, or the pavements and roadways, or other places which may have been disturbed in such laying, setting or construction, shall, in the opinion of said Aqueduct Commissioners, require to be recaulked, reset, reconstructed, regraded or repaired, the said Aqueduct Commissioners shall notify the said parties of the second part, in writing, to make such repairs, and if the said parties of the second part shall neglect to commence the work of making such repairs and prosecute the same to the satisfaction of the Aqueduct Commissioners within twenty-four hours from the date of the service of such notice, then and in every such case the said Aqueduct Commissioners shall have the right to

employ such other person or persons as they may deem proper to make the same, and to pay the expense thereof out of any money then due or which may thereafter become due to the said parties of the second part under this contract, or out of the said amount retained for that purpose by the said parties of the first part."

And Whereas, The Chief Engineer has reported that the following items of work still remain to be completed in and about said section :

1st. On Convent avenue—The retaining-walls require to be repointed in several places. The original pointing was done partly in cold weather. The contractors have still to remove some of their tools and wagons.

2d. On Manhattan avenue—At One Hundred and Twelfth street, about seventy feet of the west curbing has settled badly and should be reset.

3d. On Eighth avenue—A little north of One Hundred and Sixth street the contractors took up some curbing and paving to lay a track across the avenue. This place has never been restored to its original condition. It makes a bad hole in the street and should be repaired at once.

4th. On Eighth avenue—At One Hundredth street the repairs mentioned by the Commissioner of Public Works in his letter of June 15, 1891, should be made. The curbing and paving have settled in some places between One Hundredth and One Hundred and Sixth streets, and should be relaid.

At present there is about six inches of earth over the paving between One Hundredth and One Hundred and Sixth streets, which makes it difficult to inspect the paving. There are also some flags and stones between Ninety-seventh and One Hundred and Sixth streets, on Eighth avenue, which must be removed.

5th. In the Ninety-seventh Street Transverse Road there is still a lot of small stones which must be removed. The retaining-wall must be pointed where it has been shaken by blasting.

6th. On the west side of Eighth avenue, just north of Ninety-seventh street, there is a small piece of paving which must be relaid.

At One Hundred and Ninth street and Eighth avenue the contractors have also to replace some curbing and flagging, which they took up to lay their tracks across the avenue.

—which was concurred in by the Chief Engineer of the Croton Aqueduct ; therefore

Resolved, That the said O'Brien & Clark, contractors for said Section 16 of the New Aqueduct, be and they are hereby notified to make such repairs forthwith, and that if the said repairs are not commenced within twenty-four hours after service upon them, or either of them, of this notice and diligently prosecuted thereafter, the Aqueduct Commissioners will proceed to cause said work to be done as provided for in said contract, and pay the expense thereof out of any moneys now due or which may hereafter become due to said contractors under said contract, or out of the moneys now retained for that purpose by the Mayor, Aldermen and Commonalty of the City of New York."

The same were adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

On motion of Commissioner Scott, the Secretary was directed to notify Contractors O'Brien & Clark of the above action.

The Committee also presented the following communication, received from Edward Owen, Esq., Chief Clerk of the Commissioners of Accounts, inclosing two resolutions adopted by the Board of Estimate and Apportionment and a letter from the Mayor to the Commissioners of Accounts, and recommended that the same be spread in full on the minutes and filed:

OFFICE OF THE COMMISSIONERS OF ACCOUNTS,
ROOMS 114 AND 115, STEWART BUILDING, No. 280 BROADWAY,
NEW YORK, July 27, 1891.

To the Honorable the Aquoduct Commissioners of the City of New York:

GENTLEMEN—I am instructed by the Commissioners of Accounts to transmit herewith a copy of a communication received from his Honor the Mayor, inclosing copies of the resolutions of the Board of Estimate and Apportionment therein referred to.

The Commissioners of Accounts direct me to state further that they will be pleased to receive from you, at an early date, the information called for by these resolutions, copies of which are inclosed herewith.

Respectfully,
EDWARD OWEN, Chief Clerk.

CITY OF NEW YORK—OFFICE OF THE MAYOR,
July 22, 1891.

To the Commissioners of Accounts:

GENTLEMEN—Herewith I transmit a communication from the Clerk of the Board of Estimate and Apportionment, transmitting a resolution adopted by that Board at a meeting held on the 22d instant, requesting certain information from the Aqueduct Commissioners, and I request that you will give this matter your early attention.

Respectfully,
HUGH J. GRANT, Mayor.

A true copy.
EDWARD OWEN, Chief Clerk, C. of A.

Resolved, That the Mayor be and he is hereby requested to instruct the Commissioners of Accounts to ascertain by and through the powers vested in them by chapter 516 of the Laws of 1884 and report to this Board the information requested from the Aqueduct Commissioners, as specified in the preamble and resolution adopted by this Board at the last meeting and which the Aqueduct Commissioners by their communication this day received and now read fails to furnish.

A true copy of resolution adopted by the Board of Estimate and Apportionment July 22, 1891.
CHAS. V. ADEE, Clerk.

A true copy.
EDWARD OWEN, Chief Clerk, C. of A.

Whereas, The Chief Engineer of the Aqueduct Commissioners having notified the Chief Engineer of the Croton Aqueduct, of the Department of Public Works, that the services of the employees of the Aqueduct Commissioners in charge of the maintenance would cease on June 30, 1891; and

Whereas, By section 41, chapter 490, Laws of 1883, the Aqueduct Commissioners are authorized to employ all necessary employees, subject to the approval of the Board of Estimate and Apportionment; therefore,

Resolved, That, with the view of this Board complying with the provision of the statute referred to, the said Aqueduct Commissioners are hereby requested to furnish forthwith to this Board

a statement of all their employees, specifying the duties attended to or services performed by each such employee and the place where such duties are attended to or services are performed, and specifying the particular employees it is considered by the said Commissioners necessary to be continued in their employment after the care of the Aqueduct is transferred to the Department of Public Works.

A true copy of preamble and resolution adopted by the Board of Estimate and Apportionment July 22, 1891.

CHAS. V. ADEE, Clerk.

A true copy.

EDWARD OWEN, Chief Clerk, C. of A.

The Committee also presented the following draft of a letter, together with a report of the Chief Engineer referred to therein, and recommended that the same be spread in full on the minutes, and that said letter be signed by the President and transmitted to the Commissioners of Accounts:

NEW YORK, July 29, 1891.

EDWARD OWEN, Esq., *Chief Clerk, Commissioners of Accounts:*

SIR—The Aqueduct Commission is in receipt of a communication from you, dated July 27, 1891, inclosing two resolutions of the Board of Estimate and Apportionment, and a letter from the Mayor to the Commissioners of Accounts, dated July 22, 1891; and I am instructed by the Aqueduct Commission to answer it as follows:

On the 8th day of July, 1891, the Aqueduct Commission transmitted to the Board of Estimate and Apportionment a report of the Secretary of the Commission containing a list of all the clerks, messengers and employees appointed pursuant to the provisions of section 41, chapter 490, Laws of 1883, that being the section referred to in the resolution of the Board of Estimate and Apportionment.

I now transmit to you a copy of a report of the Chief Engineer, made to the Committee on Construction, on July 7, 1891, containing a list of all the employees of the Commission outside of those included in the Secretary's report, above referred to, and containing also a statement of the duties attended to or services performed by each, and the place where such duties are attended to or services are performed, and the salary or compensation paid to each.

Since this report was made the following changes have been made in the Engineer Corps, which should be noted:

George S. Rice, Deputy Chief Engineer, has resigned, and the position held by him has been abolished.

R. A. Reinisch, Rodman, employed at Titicus Dam, under Division Engineer Gowen, has resigned.

The services of F. M. Bowers, Typewriter, attached to the Yonkers office, were dispensed with on July 15, 1891, her employment having been only temporary.

Gerald McMurray, Superintendent of Dam Construction, has been assigned to duty under Division Engineer Craven at the Carmel Dam, and George L. Tillotson, Superintendent of Dam Construction, has been assigned to duty at Titicus Dam.

With these corrections and alterations this report contains an accurate statement of all the persons employed in the engineer force, and together with the report of the Secretary, above referred to, and of which a copy is transmitted to you, contains a list of all the employees of the Aqueduct Commission.

I am further instructed by the Aqueduct Commission to say to the Commissioners of Accounts, through you, that all the books and records of the Commission are at all times open to the examination and inspection of the Commissioners of Accounts.

Prior to the appointment of your immediate predecessors it was the unvarying custom of the Commissioners of Accounts to make frequent and exhaustive examinations of all the books, accounts and records of the Aqueduct Commission, a practice which, to the regret of the Commission, has been discontinued since the date of the appointment of your predecessors in office.

While, so far as we are aware, no irregularities were ever discovered by the Commissioners of Accounts, yet it was a source of satisfaction to the Aqueduct Commissioners and to the employees at the head of the office to have the work of the Commission examined and checked by the expert accountants employed by the Commissioners of Accounts, and it has been with much regret that the Aqueduct Commission have seen the practice discontinued during the past two years.

I am further instructed by the Aqueduct Commission to say that there has never been at any time any difficulty in the way of any person who sought to know the exact number, rate of compensation and duties of the several employees of the Aqueduct Commission. Detailed statements have been frequently printed in the minutes of the Commission and in the CITY RECORD. Numerous reports have been made to the Board and to the Committee on Construction by the Chief Engineer and the Secretary, all of which have been accessible at any time to any person having the curiosity to inspect them, and the very reports of which copies are herewith transmitted to you have lain before the Committee on Construction since the 7th of July ; and either of the two members of the Board of Estimate and Apportionment, who are also members of the Aqueduct Commission, could have obtained the information now transmitted to you for the mere asking.

I would also beg to call your attention to the fact that the monthly and weekly pay-rolls of the Aqueduct Commission are regularly filed in the office of the Comptroller, and must, of necessity, come under the eyes of the Commissioners of Accounts when they make the stated examinations of the Comptroller's Office required by the act under which they were appointed.

Very respectfully yours,

President.

CHIEF ENGINEER'S OFFICE—AQUEDUCT COMMISSIONERS,
ROOM 213, STEWART BUILDING,
NEW YORK, July 7, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—In obedience to your resolution of June 30, I beg to report as follows as to the number and occupation of employees under the direction of the Chief Engineer :

CHIEF ENGINEER'S OFFICE (Stewart Building).

A. Fteley, Chief Engineer	$10,000 00	per annum.
George S. Rice, Deputy Chief Engineer	7,000 00	"
F. W. Frost, Special Assistant Engineer and Secretary to Chief Engineer, assists the Chief Engineer in the preparation of his personal work, and in charge of all final estimates	2,400 00	"
William H. Spencer, Chief Clerk, in charge of vouchers for all estimates of work done ; also of all bills for supplies and requisitions for the same ; also of all pay-rolls, weekly and monthly, and of miscellaneous clerical work	2,000 00	"
Robert A. McKim, Assistant Engineer, in charge of all the engineering records, and partly assisting Chief Clerk Spencer	1,500 00	"
George B. Bosworth, Clerk	75 00	per month.
William E. Guilfoyle, Stenographer and Typewriter	85 00	"
Charles Thomas, Office Boy	50 00	"
Louis P. De Luze, Assistant Engineer (now detached to Yonkers office)	1,800 00	per annum.
A. S. Nye, Leveler (now detached to Yonkers office)	75 00	per month.

DRAUGHTING BUREAU (Stewart Building).

F. S. Cook, Special Assistant Engineer in charge	$3,500 00	per annum.
Guiseppe Bonanno, Draughtsman	150 00	per month.
Charles C. Manning, "	150 00	"
Charles G. Gustafson, "	150 00	"
Caesar Leonhard, "	150 00	"
Robert W. Creuzbaur, "	150 00	"
J. Arthur Valles, Office Boy	50 00	"

TOPOGRAPHICAL PARTY, EMPLOYED IN SURVEYING THE LANDS FOR THE PROPOSED RESERVOIRS AND DAMS ON CROTON RIVER, BRIDGES, ROADS, ETC.

E. P. Roberts, Assistant Engineer	$1,800 00	per annum.
J. P. Schermerhorn, Transitman	125 00	per month.
M. Washburn, Rodman	75 00	"
J. Fagan, "	75 00	"
G. Hopey, Axeman	60 00	"
J. Lounsberry, Laborer	2 00	per day.
J. Tompkins, "	2 00	"
J. D. Grannis, "	2 00	"
J. P. Genthon, Topographical Draughtsman (Stewart Building)	150 00	per month.
J. A. Byrne, Assistant Topographical Draughtsman (employed in Yonkers)	100 00	"
Walter J. Sager, Engineman in charge of Borings (Three Diamond Drills)	125 00	"
G. A. Hammond, Foreman, employed on borings	100 00	"
M. Tierney, Assistant Foreman, "	90 00	"
J. S. Lockwood, First Helper, "	65 00	"
T. Greaser, " "	65 00	"
P. Lynch, Second Helper, "	65 00	"
George Wilson, Fireman, "	65 00	"
B. Jones, " "	65 00	"
M. Fletcher, " "	65 00	"
John Regan, Laborer, employed on test-pits	2 00	per day.
E. W. Purdy, " "	2 00	"
C. H. Manchester, Laborer, "	2 00	"
E. Sarles, " "	2 00	"
H. Bailey, " "	2 00	"
H. Adams, " "	2 00	"
R. F. Vredenberg, " "	2 00	"
C. McCord, " "	2 00	"

DAMS AND RESERVOIRS UNDER CONSTRUCTION.

Walter McCulloh, Division Engineer, in charge of Sodom and Bog Brook Dams	$3,000 00	per annum.
C. E. Richards, Cement Tester for Sodom and Bog Brook Dams	3 00	per day.
T. Kelley, Janitor, "	60 00	per month.
O. H. Cole, Laborer, "	2 00	per day.
F. N. Speyer, Transitman, Sodom Dam	1,500 00	per annum.
E. C. Penny, Rodman, "	75 00	per month.
T. Bowen, Axeman, "	60 00	"
J. Kinney, " "	60 00	"

W. N. Cook, Superintendent Dam Construction, Sodom Dam	$4 00	per day.
A. L. Crosby, " "	4 00	"
J. O'Connor, Laborer, Sodom Dam	2 00	"
W. S. Humbert, Assistant Engineer, Bog Brook Dams	1,800 00	per annum.
W. T. Ross, Transitman, "	1,500 00	"
I. H. Baxter, Rodman, "	75 00	per month.
J. J. Crane, Axeman, "	60 00	"
F. F. Hine, " "	60 00	"
J. Holohan, Superintendent Dam Construction, Bog Brook Dams	4 00	per day.
T. Graham, " "	4 00	"
T. Capper, " "	4 00	"
C. Hutchings, Laborer, Bog Brook Dams	2 00	"
G. C. Bowdy, " "	2 00	"

(The last twenty-one employees are employed and reside in Brewsters, N. Y.)

Alfred Craven, Division Engineer, in charge of Two Carmel Dams	$4,000 00	per annum.
W. B. Swan, Assistant Engneer, "	1,800 00	"
W. Gray, Transitman, "	1,500 00	"
R. Baldwin, Jr., Transitman, "	1,500 00	"
D. McR. Livingstone, Rodman, "	75 00	per month.
H. Sunkle, Chainman, "	60 00	"
S. M. Lyons, Jr., Axeman, "	60 00	"
J. F. Banks, Axeman, "	60 00	"
A. J. Fleming, Superintendent of Dam Construction, in charge of Two Carmel Dams	4 00	per day.
P. J. Moynihan, Superintendent of Dam Construction, in charge of Two Carmel Dams	4 00	"
I. S. Rossell, Superintendent of Dam Construction, in charge of Two Carmel Dams	4 00	"
J. McCormick, Laborer, in charge of Two Carmel Dams	2 00	"
M. Cusick, " "	2 00	"
L. Clements, " "	2 00	"
J. Healey, " "	2 00	"
J. McDonald, " "	2 00	"

Mr. Craven remains in charge of construction of lower part of Aqueduct. All the above employees are employed and reside in Carmel, N. Y.

Charles S. Gowen, Division Engineer, in charge of Titicus Dam at Purdy's Station	$4,000 00	per annum.
Robert Ridgway, Assistant Engineer, in charge of Titicus Dam at Purdy's Station	1,800 00	"
E. S. Larned, Assistant Engineer, in charge of Titicus Dam at Purdy's Station	1,500 00	"
E. E. Delancey, Leveler, in charge of Titicus Dam at Purdy's Station	1,200 00	"
R. A. Reinisch, Rodman, "	75 00	per month.
W. A. Hoe, Jr., Computer, "	75 00	"
E. Mezger, Axeman, "	60 00	"
W. Whelan, " "	60 00	"
J. Gregory, Janitor, "	75 00	"
Isaac Thomas, Superintendent of Dam Construction, in charge of Titicus Dam at Purdy's Station	4 00	per day.
J. H. Slingerland, Superintendent of Dam Construction, in charge of Titicus Dam at Purdy's Station	4 00	"

William H. Langler, Superintendent of Construction, in charge of Titicus Dam at Purdy's Station	$4 00	per day.
Tony Mount, Laborer, in charge of Titicus Dam at Purdy's Station	2 00	"

The last twelve employees are employed at Purdy's Station. (Mr. Gowen keeps at the same time his superintendence of the construction of the work on the upper half of the Aqueduct.)

AQUEDUCT PROPER.

The following persons are employed for the work on the Aqueduct:

W. S. Page, Assistant Engineer, in charge of work at Croton Dam	$1,500 00	per annum.
Ira Ganong, Chainman, work at Croton Dam	60 00	per month.
J. Gallery, Axeman, work at Croton Dam	60 00	"
F. B. Rogers, Assistant Engineer, work of construction from Irvington to Croton Dam	1,500 00	per annum.
J. Dynan, Stableman and Janitor, Tarrytown office	60 00	per month.
W. Guilfoyle, Laborer, Tarrytown office	2 00	per day.
B. R. Value, Assistant Engineer, on preparation and collation of records and documents	1,800 00	per annum.
D. O'Shea, Leveler, on preparation and collation of records and documents	1,200 00	"
Mattie Meadows, Typewriter, on preparation and collation of records and documents	2 50	per day.

The residence of the above is from Tarrytown to Croton Dam.

F. W. Watkins, Assistant Engineer, work of construction from Irvington to Harlem river, including unfinished Aqueduct estimates	1,800 00	per annum.
H. C. Alden, Assistant Engineer, work of construction from Irvington to Harlem river, including unfinished Aqueduct estimates	1,800 00	"
McR. Sykes, Computer, work of construction from Irvington to Harlem river, including unfinished Aqueduct estimates	75 00	per month.
F. M. Bowers, Typewriter, work of construction from Irvington to Harlem river, including unfinished Aqueduct estimates	65 00	"

Headquarters of the last four employees, Yonkers office.

E. Wegmann, Jr., Division Engineer, in charge of construction at and below Harlem river	3,000 00	per annum.
C. V. V. Powers, Assistant Engineer, in charge of construction at and below Harlem river	1,500 00	"
M. A. Viele, Assistant Engineer, in charge of construction at and below Harlem river	1,500 00	"
G. E. Washburn, Leveler, in charge of construction at and below Harlem river	1,200 00	"
B. L. Blauvelt, Axeman, in charge of construction at and below Harlem river	60 00	per month.
A. L. Beatty, Axeman, in charge of construction at and below Harlem river	60 00	"
W. J. Garvin, Axeman, in charge of construction at and below Harlem river	60 00	"
Charles McKeon, Axeman, in charge of construction at and below Harlem river	60 00	"

Work at Shaft 25.

R. S. Gillespie, Foreman	$5 00	per day.
Harry James, Journeyman Machinist	3 00	"

R. D. Philbin, Journeyman Machinist	$3 00 per day.
Frank Hart, "	3 50 "
J. E. Kearns, Assistant Journeyman Machinist	2 00 "
Daniel Manning, Laborer	2 00 "

The work of construction remaining to be done on the Aqueduct is in the main as follows:

The construction of the superstructure at Croton Dam; also of the highway in the same neighborhood.

The construction of eleven head-houses at the mouth of the shafts of the Aqueduct.

The grading and finishing of the grounds at twenty-five shaft-sites.

The construction of a blow-off from Shaft 24 to Harlem river.

The construction of a head-house over Shaft 25.

The foundation of a pumping-station with the necessary excavation, grading roads, etc., near Shafts 25 and 26.

The grading, fencing, curbing, etc., of the grounds around the One Hundred and Thirty-fifth Street Gate-house, etc.

The employees whose discharge I have recommended on account of the transfer of the care of the Aqueduct to the Department of Public Works, having left the service of the City, I have not at present any more recommendations to make as to the discharge of employees.

I am, very respectfully,

(Signed) A. FTELEY, Chief Engineer.

On motion of Commissioner Cannon, the recommendation was approved and adopted.

Commissioner Scott then moved that when the Commissioners adjourn, they adjourn to meet to-morrow, July 30, 1891, at 3 o'clock P. M.

Carried.

The Commissioners then adjourned.

J. C. LULLEY, Secretary pro tem.

AQUEDUCT COMMISSION.

Minutes of Adjourned Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Thursday, July 30, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

In the absence of the Secretary, Auditor J. C. Lulley acted as Secretary pro tem.

The Committee of Finance and Audit presented the following :

The Committee of Finance and Audit report :

That they have examined the bids and checks received July 29, 1891, for constructing a highway, retaining-walls, appurtenances, etc., at Croton Dam, in the Town of Yorktown, Westchester County, New York.

The checks, amounting to five thousand dollars, were correct and transmitted to the Comptroller and his receipt is on file.

The bids were found correct as to their formality, and the sureties proposed appear to be sufficient, with the exception of Bid No. 8, of James Hart, Dobbs Ferry, New York, which has no affidavit attached as required.

On motion of Commissioner Tucker, the report was approved.

The Construction or Executive Committee recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, the contract for constructing a highway, retaining-walls, appurtenances, etc., at Croton Dam, in the Town of Yorktown, Westchester County, New York, be and hereby is awarded to Augustine M. Newton at his bid of seventeen thousand five hundred and seventy-three dollars and seventy-five cents, it being the lowest bid received for doing said work and less than the estimate of the Chief Engineer.

The same was adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

OCT 30 1998

Mr. James S. Coleman, in behalf of said Michael S. Coleman, appeared before the Committee, at a meeting held this day, and gave the Committee sufficient reasons to warrant them in recommending that a postponement of the hearing be given to Wednesday, August 12, 1891, at 3 o'clock P. M., in order to allow said contractor to increase the force employed by him, and also to carry out the suggestions of the Chief Engineer with regard to the prosecution of the work.

On motion of Commissioner Tucker, the report was approved and the recommendation therein contained adopted.

The Commissioners then adjourned.

J. C. LULLEY, Secretary pro tem.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, August 19, 1891, at 3 o'clock P. M.

Present—The Commissioner of Public Works, and Commissioners Duane, Tucker, and Scott.

The Committee of Finance and Audit reported their examination and audit of Vouchers Nos. 7185 to 7193, inclusive, being estimates for work done by contractors, amounting to $51,212.69; also of bills contained in Vouchers Nos. 7194 to 7207, inclusive, amounting to $5,083.87.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The following was received from the Construction or Executive Committee:

The Construction or Executive Committee present herewith the following report received from the Secretary, showing in detail the expenditures of the Aqueduct Commission from its inception up to and including June 30, 1891, and recommend that the same be spread in full on the minutes and filed:

Abstract of Trial Balance to July 1, 1891.

Commissioners' Office.		
Salaries of Commissioners	$194,601 91	
" Secretary and employees	104,863 39	
Stationery	3,199 19	
Furniture and fixtures	3,165 71	
Rent	30,458 20	
Incidental expenses	5,408 20	
Books, maps and drawings	337 10	
Traveling expenses	1,342 98	
Advertising	18,286 29	
Stenographic reports	4,334 29	
		$365,997 26

Chief Engineer's Office.		
Salaries of Engineers, etc	$419,834 33	
Stationery	5,861 93	
Furniture and fixtures	4,268 54	
Rent	34,895 55	
Incidental expenses	6,669 06	
Books, maps and drawings	18,289 75	
Consulting Engineer's fees	100 00	
Drawing instruments, tables and materials	3,862 40	
Testing machines and tests	8,203 81	$501,985 37
Tarrytown Office.		
Salaries of Engineers	$57,692 24	
Stationery	1,180 41	
Furniture and fixtures	750 25	
Rent	6,600 00	
Incidental expenses	4,030 36	
Books, maps and drawings	92 81	
Drawing instruments, tables and materials	1,127 78	
Laborers on the line	2,703 17	
Drivers and Laborers	19,989 03	
Field instruments and implements	8,776 99	
Traveling expenses	3,947 87	
Harness and stable fittings	2,045 45	
Maintenance—Horses and wagons	11,022 82	
Horses	3,573 00	
Wagons	1,518 00	
Hire of horses and wagons	1,228 25	126,278 43
Division Engineers.		
Salaries of Engineers and Laborers, old account	$154,834 84	
" " new account	1,267,112 99	
Stationery	5,713 76	
Furniture and fixtures	4,525 13	
Rent	22,269 83	
Incidental expenses	10,500 63	
Books, maps and drawings	51 99	
Drawing instruments, tables and materials	2,814 33	
Field instruments and implements	17,592 68	
Traveling expenses	6,040 56	
Harness and stable fittings	1,459 19	

Maintenance—Horses and wagons	$12,025 09	
Horses	1,925 00	
Wagons	1,801 00	
Heating headquarters	8,036 08	
Hire of horses and wagons	675 50	
Testing machines and tests	2,812 41	
Laborers on the line	15 75	
Auxiliary offices	3,107 27	
		$1,523,314 03
Croton Lake Survey.		
Salaries—Engineers and Laborers	$39,620 04	
Incidental expenses	74 89	
Field instruments and implements	583 16	
Traveling expenses	340 92	
Hire of horses and wagons	130 25	
Maintenance—Horses and wagons	51 60	
Rent	24 00	
Harness and stable fittings	45	
Drawing instruments, tables and materials	1 00	
		40,826 31
New Reservoir Survey.		
Salaries—Engineers and Laborers	$9,588 00	
Drawing instruments, tables and materials	25 68	
Field instruments and implements	434 31	
Furniture and fixtures	6 38	
Traveling expenses	8 54	
Incidental expenses	52 06	
Stationery	3 91	
		10,118 88
Sodom Dam Survey.		
Salaries—Engineers and Laborers	$7,072 68	
Maintenance—Horses and wagons	2 00	
Field instruments and implements	86 49	
Hire of horses and wagons	50 75	
Incidental expenses	44 98	
Stationery	1 50	
Traveling expenses	47 10	
		7,305 50
Surveying Dam Sites.		
Salaries—Engineers and Laborers	$23,092 70	
Stationery	26 35	
Hire of horses and wagons	102 00	

Field instruments and implements	$88 00	
Heating headquarters	6 93	
Furniture and fixtures	37 50	
Traveling expenses	552 09	
Drawing instruments, tables and materials	7 80	
Incidental expenses	700 48	
Maintenance—Horses and wagons	524 10	
Rent	545 38	
Books, maps and drawings	8 00	
		$25,701 33
Principal Assistant Engineer, New York Office.		
Heating headquarters	$9 25	
Stationery	59 06	
Furniture and fixtures	36 24	
Incidental expenses	53 36	
		157 91
Aqueduct Commissioners' Report, 1883–1887	$8,896 36	
Engraving and printing	22,759 08	
Reports of Engineers and Aqueduct Commissioners on Quaker Bridge Dam	1,473 16	
Reports of Engineers on High Masonry Dam	490 75	
Construction damages	200 00	
Claims for damages	2,363 50	
Taxes on lands	7,737 14	
Land agents	1,168 65	
Diamond rock boring drills	130,016 65	
Diamond rock borings	7,077 42	
Monumenting the line	3,704 98	
Monumenting Sodom Dam survey	1,546 72	
Monumenting Aqueduct tunnel—Division Engineer	143 72	
Models	1,355 43	
Observatory towers	1,805 95	
Judgments	507 54	
Land and land damages	54,689 82	
Examination of ventilation and lighting	1,306 36	
Examining Engineers	11,041 82	
Board of Experts, etc, Quaker Bridge Dam	12,550 00	
Experts examining construction work	11,926 16	
Experts on water-gates and other machinery	210 00	
Inspection of cast-iron pipes, etc	8,286 40	
East Branch Reservoir—Incidental expenses	165 00	
		291,422 61
		$2,893,107 63

Contracts.

SECTION.	ESTIMATE.		
1	Final.	Smith & Brown	$649,964 62
2	"	Brown, Howard & Co	2,490,829 35
3	"	"	1,836,215 99
4	"	"	1,805,244 83
5	"	"	810,066 15
6	"	O'Brien & Clark	748,852 97
7	"	"	1,777,610 99
8	"	"	1,454,157 36
9	70½	"	1,897,542 79
B	71	Heman Clark	1,445,187 87
A	39	"	1,105,778 60
12	Final.	Chas. Peterson, assignee of O'Brien & Clark	541,923 04
13	"	John Brunton & Co	427,641 42
14	"	"	647,869 75
15	"	Richard A. Malone	156,358 20
15½	"	Robert Hanna & Co	27,416 82
16	"	O'Brien & Clark	962,559 51
17	"	Richard J. Malone	37,621 69
East Branch Reservoir Dam	40	Sullivan, Rider & Dougherty	349,139 82
Dams 1 and 2	27	David R. Paige & Co	199,073 94
Deepening and finishing Shaft 24	Final.	O'Brien & Clark	91,904 59
Iron-lined masonry Aqueduct	"	Breuchaud, Pennell & Co	69,369 20
Stop-cock valves	"	Coldwell, Wilcox & Co	19,649 53
Gate-house at Pocantico	"	John Peirce	21,717 92
Shaft 13A	"	O'Brien & Clark	22,963 40
Shaft 13½	"	"	18,093 69
Shaft 15½	"	John A. Lee	15,412 90
One Hundred and Thirty-fifth Street Gate-house, doors windows, etc	"	Charles W. Palmer	6,935 00
Cast-iron work and wrought-iron work, New Croton Gate-house	"	Coldwell, Wilcox & Co	16,057 02
Highways, etc., East Branch, etc	"	Clinton Stephens	90,851 69
Gate-house superstructure walls for Blow-off Chamber at Ardsley	"	O'Brien & Clark	4,900 00
Cutting timber and clearing grounds, East Branch Reservoir	"	Pennell & O'Hern	8,975 00
22 2' x 5' sluice gates, etc., Sections 15 and 17	"	John Fox	14,190 00
3' x 4' sluice gates, Pocantico, Ardsley and South Yonkers Gate-houses	"	"	6,750 00
3' x 6' sluice gates	"	"	21,900 00

SECTION.	ESTIMATE.			
Earth and masonry dam, Reservoir M	15	Washburn, Shaler & Washburn	$100,348 46	
Gate-house at South Yonkers	Final	O'Brien & Clark	20,349 79	
Gate-house for the new gate chambers at Croton Dam, Section 1	7	Smith, Brown & Coleman	12,779 55	
Combined stationary hoisting engines, etc., for Shaft 25	Final	Charles Peterson	11,250 00	
2 pairs horizontal tubular boilers, etc	"	West Point Manufacturing Co	11,900 00	
Earth and masonry dam, Reservoir D	7	Michael S. Coleman	8,918 59	
Auxiliary earth and masonry dam, Reservoir D	7	"	4,143 51	
11 head-houses, etc., for the shafts	5	Breuchaud, Pennell & Co	15,258 03	
				$19,985,673 58

Agreements.

SECTION.	ESTIMATE.			
Shaft 11C	Final	Brown, Howard & Co	$5,000 00	
Shaft 12C	"	O'Brien & Clark	5,000 00	
Shaft 16½	"	"	5,000 00	
Shaft 18¾	"	"	5,000 00	
Shaft 19½	"	Heman Clark	5,000 00	
Culvert, Shaft 19	"	O'Brien & Clark	4,893 74	
" 20	"	Heman Clark	2,932 05	
" 23	"	O'Brien & Clark	3,208 86	
Crib dock	"	Charles Peterson	3,694 60	
Iron work, Saw Mill river blow-off	"	Coldwell, Wilcox & Co	1,962 57	
Pocantico blow-off	"	"	144 11	
Tibbett's Brook blow-off	"	"	144 11	
Lining Shafts 22 to 24, Section A	"	"	4,450 75	
" Shaft 20, Section B	"	"	2,663 28	
" Shaft 28, Section 13	"	"	2,315 02	
" Shaft 29, Section 14	"	"	2,358 57	
Cast and wrought iron ladders, Sections 1 to 9 and B and A	"	"	2,824 25	
Roof, iron floor plates	"	"	3,326 70	
Cast-iron special pipes	"	"	4,931 19	
Filling the low ground at Shaft Site No. 12	"	O'Brien & Clark	4,910 00	
Cave-in, Shaft 13	"	"	5,000 00	
Laying 20-inch pipe, Shaft 24	"	"	2,895 83	
Grouting Shaft 17½	"	"	4,427 50	
" Stations 778 and 779	"	"	1,075 00	
" Section 13	"	Rogers, Shanly & Co	5,000 00	

SECTION.	ESTIMATE.			
Grouting Shaft 30	Final	Breuchaud, Pennell & Co	$2,900 93	
Highways, trestle-work and bridges.	"	Smith & Brown	4,500 00	
Sodding South Yonkers embankment	"	Rider & Dougherty	1,575 57	
Taking down and enlarging top of Shaft 11C	"	C. L. Kalmbach	2,917 32	
Walls, foundations, near blow-off chamber, Shatt 24	"	Charles Peterson	2,233 12	
Frame head-house and enlarging room, Shaft 25	"	"	3,690 00	
Frame boiler-house and coal bin, Shaft 25	"	"	3,635 00	
Shaft 17½	"	Thomas O'Hern	2,222 12	
9-inch anti-friction pumps and improved turbine wheel, etc., Croton Dam Gate-house, Section 1	"	Joseph Edwards & Co	2,135 00	
6 2' x 5' sluice-gates at Bog Brook, etc.	1	John Fox	2,520 00	
Pivot gate, Bog Brook Dams 1 and 2	1	Coldwell, Wilcox & Co	1,833 75	
				$118,320 94

Bailing, pumping, etc., Section A	$1,309 50
Pumping water in iron pipes, Section 12	6,063 65
" Section 13	5,405 00
" Section 14	7,935 00
Iron pipe laid in tunnel, Section A	4,615 76
" Section B	980 50
48-inch pipes at Shaft 11B	327 50
48-inch stop-cock valves	4,500 00
Iron work, etc., at shafts	16,456 74
Iron work, etc., for gate-houses and blow-offs	13,754 82
Timber work, etc., at shafts and gate-houses	18,992 89
Exploration under the Harlem river	4,384 26
Experimental section in concrete, Shaft 18	185 25
Extra work, etc., on Section 1	4,616 03
" " 6	42 70
" " 12	65 07
" " 14	597 49
" " 15	89 32
" " 16	668 98
" enlarging Shaft 11C	147 81
" on the Pocantico Gate-house	287 44
Additional work, Section 9	49 37
" " 12	36 03
" " A	1,609 56
" East Branch Reservoir Dam	1,226 88

Additional work, earth and masonry dam, Reservoir M	$1,339 53	
" highways and roads at East Branch	2,570 97	
Removing solid rock, etc	701 03	
Grading, etc., trenches, Quaker Bridge Dam site	150 00	
Survey and topographical map on Croton Watershed	7,000 00	
Sounding south of One Hundred and Thirty-fifth street	931 18	
Sinking test pits, Titicus river and Reservoir D Dam sites	540 35	
Hoisting engines for shafts	1,000 00	
Coating interior Aqueduct with cement	8,384 37	
Telephone line	4,995 62	
Preparing, pumping, etc., inverted siphon	2,643 91	
Repairing Aqueduct for permanent use	211 66	
Iron bridge on the East Branch of Croton river	2,145 00	
Iron work, etc., for dams	2,239 64	
		$129,200 81
Commissioners of Appraisal.		
Awards, Twenty-fourth Ward	$134,598 81	
" Manhattan Island Section	796,572 35	
" Westchester County Section	183,577 48	
" Putnam County Section	410,063 15	
		1,524,811 79
City and County of New York	$97,682 02	
Westchester County	169,022 82	
Manhattan Island Section	75,326 41	
Putnam County Section	107,675 69	
		449,706 94
Total Expenditures		$25,100,821 69
Cr.		
Additional Water Stock	$24,195,000 00	
Premium Account	607,168 70	
Additional Water Fund "Miscellaneous"	7,459 75	
Total Receipts		24,809,628 45
Balance, Comptroller's Account vs. Aqueduct Commission		$291,193 24

Statement of Receipts and Expenditures of the Aqueduct Commissioners to July 1, 1891.

RECEIPTS.		
From Bonds Issued—		
Amount of bonds	$24,195,000 00	
Premium on same	607,168 70	
	$24,802,168 70	
From proceeds of miscellaneous sales, etc	7,459 75	
Total receipts		$24,809,628 45
EXPENDITURES.		
Vouchers, Pay-rolls, etc	$2,838,417 81	
Contracts, agreements, etc	20,233,195 33	
Land and land damages	54,689 82	
	$23,126,302 96	
Commissioners of Appraisal	1,974,518 73	
Total Expenditures		25,100,821 69
Balance, Comptroller's account vs. Aqueduct Commissioners		$291,193 24

On motion of Commissioner Scott, the recommendation was adopted.

The Committee also recommended the adoption of the following resolution:

Resolved, That the bill of M. M. Baker, amounting to $25, for carting the hoisting frame from Shaft 25 to Yonkers, be and the same is hereby approved; and a voucher for said amount is hereby ordered certified to the Comptroller for payment.

On motion of Commissioner Tucker, the resolution was adopted.

The Committee also reported in favor of the adoption of the following resolution:

Resolved, That the bill of M. M. Baker, amounting to $125, for moving the two portable hoisting plants from Shaft 4 to Yonkers, be and the same is hereby approved; and a voucher for said amount is hereby ordered certified to the Comptroller for payment.

On motion of Commissioner Tucker, the same was adopted.

The Committee also reported in favor of the adoption of the following resolution:

Resolved, That the bill of Coldwell, Wilcox Co., amounting to eighty-five dollars and eighty-eight cents, for cartage, labor and materials used in making alterations in the screen at Shaft No. 11A, be and the same is hereby approved; and a voucher for said amount is hereby ordered certified to the Comptroller for payment.

On motion of Commissioner Scott, the same was adopted.

The Committee also presented the following communication, received from the Chief Engineer, and recommended that the same be spread in full on the minutes and filed :

NEW YORK, August 11, 1891.

Since my last report, dated the 27th ultimo, a flow of water of about 50,000,000 gallons per twenty-four hours from Sodom Dam has been maintained, lowering thereby the surface of the Reservoir 3.70 feet.

The water is now eight and twenty-hundredths (8 20-100) feet lower than it was when the gates were opened for the first time.

A. FTELEY, Chief Engineer.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also reported in favor of the adoption of the following resolution :

Resolved, That the action of the Chief Engineer in employing R. B. Wixom as a Laborer on the 28th of July last, to do certain work at Reservoir "D," be and the same is hereby approved.

On motion of Commissioner Scott, the recommendation was adopted.

The Committee also reported in favor of the adoption of the following resolution :

Resolved, That the action of the Chief Engineer, in assigning Rollin B. Vose to duty as Superintendent of Dam Construction on the 10th instant, be and the same is hereby approved.

On motion of Commissioner Tucker, the recommendation was adopted.

The Committee also presented the following communication received from the Chief Engineer :

NEW YORK, August 11, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—Owing to the distance of the Auxiliary Dam at Carmel from the office, it would be desirable to erect at the first-mentioned place a small building containing a desk for the accommodation of the Engineers and their instruments.

I have asked for and received two (2) proposals for the same, as follows :

S. E. Nichols, Carmel	$250 00
Ellsworth Fowler, Carmel	190 00

This is to ask you for authority to order Mr. Fowler to build at once the office for the sum of $190.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommend the adoption of the following resolution :

Resolved, That the Chief Engineer be and hereby is authorized to contract with Ellsworth Fowler to do the work above referred to, at an expense not to exceed the sum of $190, and an appropriation of said amount is hereby made for doing said work.

The same was adopted by the following vote :

Affirmative—The Commissioner of Public Works, and Commissioners Duane, Tucker and Scott—4.

The Committee also reported in favor of the adoption of the following resolution :

Resolved, That upon the recommendation of the Chief Engineer, A. J. Sparrow, H. O. Cole and J. F. McDonough be and are hereby added to the list of Superintendents of Dam Construction, their pay to begin when they shall be assigned to duty by the Chief Engineer.

On motion of Commissioner Tucker, the same was adopted.

The Committee also presented the following communication, received from the Chief Engineer :

NEW YORK, August 11, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—The President of the Aqueduct Commissioners having referred to me the enclosed letter of Mr. M. G. Hart as to certain nuisances caused by our work in Ardsley, I have made an investigation of the case and find that the abutting owners are entitled to the abatement of the nuisance by those responsible for the construction of the Aqueduct.

My estimate of the cost of the work necessary in the premises will not exceed the sum of $350, and I recommend that the Chief Engineer be authorized to do the necessary work.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommend the adoption of the following resolution :

Resolved, That the foregoing recommendation of the Chief Engineer is hereby approved and adopted, and an appropriation of $350 is hereby made to do the work above referred to.

The same was adopted by the following vote :

Affirmative—The Commissioner of Public Works, and Commissioners Duane, Tucker and Scott—4.

The Committee also reported in favor of the adoption of the following resolution :

Resolved, That upon the recommendation of the Chief Engineer, Benjamin L. Blauvelt, employed as Axeman on the New Aqueduct, is hereby certified to the Civil Service Examining Board for examination for promotion to the rank of Leveler.

On motion of Commissioner Scott, the recommendation was adopted.

The Committee also presented the following communication, received from the Chief Engineer :

NEW YORK, August 17, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—On June 10 you authorized me to procure from the Jonson Foundry & Machine Company, whose bid was the lowest, eight (8) valve-seatings for the lower half of the blow-off at Shaft 25.

These pieces are now in hand for the reconstruction of two gates by Foreman Gillespie and his men, and inasmuch as these seatings are satisfactory, I would ask you to authorize me to pro-

cure a duplicate of the same from the same parties at the same price (which was $200 for the 8 seatings) for the reconstruction of the remaining two gates.

On the first letting the bids received were :

Jonson Foundry & Machine Company	$200 00
The Dumbarton Iron Works (Messrs. Reid & Duff)	215 00

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommend the adoption of the following resolution :

Resolved, That the Chief Engineer be and is hereby authorized to procure the duplicate valve-seatings above referred to from the Jonson Foundry & Machine Company, at a price not to exceed $200, and an appropriation of said amount is hereby made to cover the expense of said purchase.

The same was adopted by the following vote :

Affirmative—The Commissioner of Public Works, and Commissioners Duane, Tucker and Scott—4.

The Committee also reported in favor of the adoption of the following resolution :

Resolved, That the action of the Chief Engineer in employing Edward Whitehouse as a Laborer at $2 per day, on the 14th instant, be and the same is hereby approved.

On motion of Commissioner Tucker, the same was approved.

The Committee also presented the following communication, received from the Chief Engineer, and recommend that the same be spread in full on the minutes and filed :

NEW YORK, August 18, 1891.

Since my last report, dated the 11th instant, the flow of water from Sodom Dam has been maintained at 50,000,000 gallons per twenty-four hours, lowering thereby the surface of the Reservoir 2.40 feet.

The water is now 10.67 feet lower than it was when the gates were opened for the first time.

A. FTELEY, Chief Engineer.

On motion of Commissioner Scott, the recommendation was adopted.

The Committee also reported in favor of the adoption of the following resolution :

Resolved, That the Chief Engineer be and he is hereby authorized to employ six laborers to do such trenching as may be required at the Cornell Dam Site.

On motion of Commissioner Scott, the same was adopted.

The Committee also presented the resignation of Leveler David O'Shea, to take effect on the 25th instant, and recommended that the same be accepted.

On motion of Commissioner Scott, the recommendation was adopted.

The Committee also presented the following :

NEW YORK, August 11, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—On the subject-matter of the communication addressed to you by the New York State Museum in regard to the specimens of rock collected during the execution of the work under your care, I have to report that in the transfer of the Aqueduct property from one office to another, numerous specimens which were of a temporary interest only were destroyed. A few remain, which I do not doubt would be of general interest, and inasmuch as they can be more permanently preserved by the State Museum, I would recommend that they be collected and presented by the Aqueduct Commissioners to the New York State Museum, reserving the privilege of having full access to them in case of necessity.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommend the adoption of the following resolution :

Resolved, That the Chief Engineer be and is hereby authorized to furnish the New York State Museum with specimens of rock referred to in the foregoing communication.

On motion of Commissioner Scott, the recommendation was adopted.

The Committee also presented the following :

The Construction or Executive Committee present herewith six similar property maps, received from the Commissioner of Public Works on July 31, 1891, showing lands required for the construction of Reservoir "M," in the Town of North Salem, Westchester County, New York, and recommend the adoption of the following resolution :

Resolved, That the six similar property maps, received from the Commissioner of Public Works on July 31, 1891, showing parcels of land required for the construction of Reservoir "M," in the Town of North Salem, Westchester County, New York, be and the same are hereby approved and adopted, and directed to be certified and transmitted to the Counsel to the Corporation for filing and delivery to the Commissioners of Appraisal, in accordance with the provisions of chapter 490 of the Laws of 1883; and the Counsel to the Corporation is hereby requested to take the steps necessary to acquire for the City, under chapter 490 of the Laws of 1883, the fee in the lands described on said maps; and the Secretary is hereby directed to furnish to the Counsel to the Corporation all maps, plans, etc., which he may require in the premises.

Adopted by the following vote :

Affirmative—The Commissioner of Public Works, and Commissioners Duane, Tucker and Scott—4.

The Secretary presented the following :

CITY OF NEW YORK—FINANCE DEPARTMENT,
COMPTROLLER'S OFFICE,
August 13, 1891.

To the Board of Estimate and Apportionment :

The bill of Albert S. Travis for damages to his property caused by members of the Engineer Corps of the New Aqueduct, in cutting forty trees, two apple trees, also trenching, etc., was presented to this Board at its meeting of July 28, 1891, and referred to the Comptroller. The resolu-

tion of the Aqueduct Commissioners, approving the payment of the same, and the report of the Chief Engineer of the New Aqueduct, giving the reasons for the damage done to the said property, were also presented, and the reasonableness of the price asked in compensation is herewith favorably reported.

I offer the following resolution for adoption.

Respectfully,

THEO. W. MYERS, Comptroller.

And offered the following:

Resolved, That the Comptroller be and he is hereby authorized and directed to pay the bill of Albert S. Travis, amounting to twenty-five dollars ($25), being for damages to the property of the said Albert S. Travis caused by members of the Engineer Corps of the New Aqueduct in making soundings and surveys in the neighborhood of the Cornell's Dam site, in cutting forty trees, two apple trees, also trenching, etc.

A true copy of resolution adopted by the Board of Estimate and Apportionment, August 13, 1891.

CHAS. V. ADEE, Clerk.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, August 26, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

In the absence of the Secretary, Auditor J. C. Lulley acted as Secretary pro tem.

The Committee of Finance and Audit reported their examination and audit of Vouchers Nos. 7210 to 7222, inclusive, amounting to $443.39; also of Vouchers Nos. 7228 and 7229, amounting to $1,750.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following communication, received from the Chief Engineer, and recommended that the same be spread in full on the minutes and filed:

NEW YORK, August 25, 1891.

Since my last report, dated the 18th instant, the flow of water from Sodom Dam has been maintained at 50,000,000 gallons per twenty-four hours, lowering thereby the surface of the Reservoir 2.74 feet.

The water is now 13.41 feet lower than it was when the gates were opened for the first time.

I am, very respectfully,

A. FTELEY, Chief Engineer.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also recommended the adoption of the following resolution:

Resolved, That the action of the Chief Engineer in temporarily employing Angelow Fleming, Gilbert Tompkins, Charles Bailey, and John Carpenter as Laborers on August 19 last, for further exploration of Cornell site, at two dollars per day, be and the same is hereby approved.

On motion of Commissioner Tucker, the recommendation was adopted.

The Committee also presented the following communication, received from the Chief Engineer :

NEW YORK, August 25, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—The work charged for in the accompanying bill of the West Point Manufacturing Company, amounting to $59.99, was done by my order and was not included in any of the work otherwise done by the said company.

I recommend that it be paid.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution :

Resolved, That upon the recommendation of the Chief Engineer, the accompanying bill of the West Point Manufacturing Company for iron work, amounting to $59.99, be and is hereby approved and ordered certified to the Comptroller for payment.

On motion of Commissioner Tucker, the recommendation was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That in view of the verbal report of the Chief Engineer that better progress is being made by Michael S. Coleman and David R. Paige & Company on the dams under contract to them, action on the resolutions requiring them to show cause why the completion of said work should not be done by the Aqueduct Commissioners, be and is hereby postponed for two weeks.

On motion of Commissioner Tucker, the same was adopted.

The Committee also reported in favor of the adoption of the following preamble and resolution :

Whereas, on June 5, 1891, the Board of Estimate and Apportionment approved of the action of the Aqueduct Commissioners in agreeing with Francis Larkin, of the Town of Ossining, New York, and Thomas J. Bushell, of the Town of Yorktown, New York, for the purchase of lands described in agreements executed by said parties ; therefore

Resolved, That a voucher be made in favor of Francis Larkin for the sum of $1,400, being for the purchase of 11.272 acres of land situated in the Town of Ossining, Westchester County, New York ; and that a voucher be made in favor of Thomas J. Bushell, for the sum of $350, being for the purchase of 2.116 acres of land located in the Town of Yorktown, Westchester County, New York, and the same are hereby certified to the Comptroller for payment.

The same was adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also reported in favor of the adoption of the following preamble and resolution :

Whereas, An application has been made by Smith, Brown & Coleman, contractors, for an extension of time for the completion of the work embraced in their contract for building the gate-house superstructure at Croton Dam, on Section 1, of the New Aqueduct ; therefore

Resolved, That, upon the recommendation of the Chief Engineer, the Aqueduct Commissioners hereby grant to Messrs. Smith, Brown & Coleman, contractors, an extension of time to November 1, 1891, in which to complete the work above referred to, providing their bondsmen shall, within ten days from the date hereof, enter into stipulations continuing their obligations for and during the completion of said contract under said extension of time, which is hereby allowed to them as further time for the performance of said contract; and also provided said Smith, Brown & Coleman enter into an agreement binding themselves to pay the cost of superintendence of said work from June 1 to the date of extension.

The same was adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

Commissioner Cannon offered the following resolution:

Resolved, That the Chief Engineer be and he is hereby directed to examine into the question of contamination of the water supply of this city from the Croton Valley, as reported by the Health authorities, and report whether any measures can be taken by this Commission to mitigate the present condition, and if it is found that it is not within the power of the Commission to take action in the matter, to report what, in his opinion, can be done by legislation or otherwise to correct existing evils.

And, on his motion, the same was adopted.

The Commissioners then adjourned.

J. C. LULLEY, Secretary pro tem.

Resolved, That, upon the recommendation of the Chief Engineer, the Aqueduct Commissioners hereby grant to Messrs. Smith, Brown & Coleman, contractors, an extension of time to November 1, 1891, in which to complete the work above referred to, providing their bondsmen shall, within ten days from the date hereof, enter into stipulations continuing their obligations for and during the completion of said contract under said extension of time, which is hereby allowed to them as further time for the performance of said contract; and also provided said Smith, Brown & Coleman enter into an agreement binding themselves to pay the cost of superintendence of said work from June 1 to the date of extension.

The same was adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

Commissioner Cannon offered the following resolution:

Resolved, That the Chief Engineer be and he is hereby directed to examine into the question of contamination of the water supply of this city from the Croton Valley, as reported by the Health authorities, and report whether any measures can be taken by this Commission to mitigate the present condition, and if it is found that it is not within the power of the Commission to take action in the matter, to report what, in his opinion, can be done by legislation or otherwise to correct existing evils.

And, on his motion, the same was adopted.

The Commissioners then adjourned.

J. C. LULLEY, Secretary pro tem.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, September 2, 1891, at 3 o'clock P. M.

Present—The Commissioner of Public Works, and Commissioners Duane, Tucker, Scott and Cannon.

The Construction or Executive Committee presented the following communication received from the Chief Engineer, and recommended that the same be spread in full on the minutes and filed:

NEW YORK, September 1, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—Since my last report of August 25, the flow of water from Sodom Dam has been maintained at the rate of fifty million gallons per twenty-four hours, lowering thereby the surface of the reservoir 2.11 feet. The water is now 15.52 lower than it was when the gates were opened for the first time.

I am, very respectfully,

A. FTELEY, Chief Engineer.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also presented a report made by a committee of the American Society of Civil Engineers on the cause of the failure of the South Fork Dam, at Johnstown, Pa., together with the following communication, received from the Chief Engineer:

NEW YORK, August 31, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—On November 24, 1890, I had the honor to submit my report on the examination of the causes of the collapse of the Conemaugh Dam, near Johnstown, Pa.

I now beg leave to present you with a copy of a subsequent report, drawn by a committee of the American Society of Civil Engineers, which will complete the information which you require on the subject.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution:

Resolved, That the Secretary be and hereby is authorized and directed to have printed seventy-five copies of the report of the Chief Engineer of the Aqueduct Commissioners on the above-mentioned subject, which was presented to the Commissioners on November 24, 1890.

On motion of Commissioner Scott, the same was adopted.

The Committee also presented forms of contract, specifications and bond, received from the Commissioner of Public Works, to provide for grading, improving and fencing the grounds at several of the shafts of the New Croton Aqueduct, and recommended the adoption of the following resolutions:

Resolved, That the forms of contract, specifications and bond, received from the Commissioner of Public Works and approved by the Counsel to the Corporation "as to form," for grading, improving and fencing the grounds at several of the shafts of the New Croton Aqueduct, be and the same are hereby approved and adopted; and the Secretary is hereby directed to have triplicate copies thereof prepared for certification by the Aqueduct Commissioners, and filed in accordance with section 25, chapter 490, Laws of 1883.

Resolved, That the President and Secretary be and they are hereby directed to advertise in the CITY RECORD, New York "World" and "Commercial Advertiser," a notice and advertisement inviting sealed bids or proposals for doing the work above referred to, as provided in the contract and specifications this day approved and adopted by the Aqueduct Commissioners.

The same were adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Commissioner of Public Works not voting.

The Committee also presented forms of contract, specifications and bond, received from the Commissioner of Public Works, to provide for grading, improving and fencing the grounds of the One Hundred and Thirty-fifth street Gate-house of the New Croton Aqueduct, and recommended the adoption of the following resolutions:

Resolved, That the forms of contract, specifications and bond, received from the Commissioner of Public Works, and approved by the Counsel to the Corporation "as to form," for grading, improving and fencing the grounds of the One Hundred and Thirty-fifth street Gate-house of the New Croton Aqueduct, be and the same are hereby approved and adopted; and the Secretary is hereby directed to have triplicate copies thereof prepared for certification by the Aqueduct Commissioners, and filed in accordance with section 25, chapter 490, Laws of 1883.

Resolved, That the President and Secretary be and they are hereby directed to advertise in the CITY RECORD, New York "World" and "Commercial Advertiser," a notice and advertisement inviting sealed bids or proposals for doing the work above referred to, as provided in the contract and specifications this day approved and adopted by the Aqueduct Commissioners.

The same were adopted by the following vote:

Affirmative—The Commissioner of Public Works, and Commissioners Duane, Tucker, Scott and Cannon—5.

The Committee also recommended the adoption of the following preamble and resolution:

Whereas, Application has been made by Breuchaud, Pennell & Co., contractors, for an extension of time for building eleven head-house superstructures, etc., for the shafts of the New Croton Aqueduct, and the Chief Engineer having recommended that an extension of time to November 1, 1891, be granted; therefore

Resolved, That the Aqueduct Commissioners hereby grant to Breuchaud, Pennell & Co., contractors, an extension of time to November 1, 1891, in which to complete the contract above referred to.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following resolution:

Resolved, That the action of the Chief Engineer in assigning D. V. Tice, from August 25, and A. S. Travis, from August 26, 1891, to temporary duty for the further exploration of the Cornell Dam Site, at $2 per day each, be and hereby is approved.

On motion of Commissioner Tucker, the same was adopted.

The Committee also presented the following communication received from the Chief Engineer:

NEW YORK, September 2, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—You authorized me, on July 1, 1891, to employ the services of Mr. G. W. Whitman for the purpose of inspecting pipes and special castings for the blow-off at Shaft 24, and the various dams, at the rate of twenty-five (25) cents per ton. This rate was established for the large amount of pipes inspected for Section 16.

Inasmuch as a portion of the castings mentioned are made at distant foundries, Mr. Whitman represents that the terms agreed to by him referred to inspections in the Camden, Florence and McNeill foundries, and that if he had to go further for the inspection of castings, which are sometimes of a comparatively small weight, he would ask the Commissioners to pay his traveling expenses. I believe that this request is a proper one, and I would recommend that it be granted.

I am, respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution:

Resolved, That the foregoing recommendation of the Chief Engineer be and hereby is approved and adopted.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following resolution:

Resolved, That the Chief Engineer be and hereby is instructed to examine and report to the Aqueduct Commissioners at their next meeting whether or not there are any nuisances on City property in the Croton valley which are now contaminating or may hereafter contaminate the water, and, if any be found, to take the necessary steps to abate such nuisances at once.

On motion of Commissioner Cannon, the same was adopted.

The Committee of Finance and Audit reported their examination and audit of bills contained in Vouchers Nos. 7232 to 7242, inclusive, amounting to $540.98.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

On motion of Commissioner Cannon, the minutes of meetings of July 22, 29 and 30, 1891, were ordered approved.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, September 9, 1891, at 3 o'clock P. M.

Present—The Commissioner of Public Works, and Commissioners Duane, Tucker and Scott.

In the absence of the Secretary, Auditor J. C. Lulley acted as Secretary pro tem.

The Committee of Finance and Audit reported their examination and audit of bills contained in Vouchers Nos. 7244 to 7256, inclusive, amounting to $878.38; also of Voucher No. 7257, being estimate for work done by contractors, amounting to $10,383.86.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following communication received from the Chief Engineer:

NEW YORK, September 8, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—I have received the following bids for building the necessary fence along the highway which has recently been completed in the vicinity of the Auxiliary Dam (Reservoir "D").

The total length of fencing required is 2,800 feet.

The names of the bidders and the amounts bid are as follows:

NAMES.	PRICE PER LINEAL FOOT.	TOTAL AMOUNT.
M. S. Coleman	50 cents.	$1,400 00
Ellsworth Fowler	20 "	560 00
S. E. Nichols	19 "	532 00

As the bid of Mr. Nichols is the lowest, and a very reasonable one, I recommend that the work be given to him at the price named.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution :

Resolved, That the work of building the necessary fence along the highway which has recently been completed in the vicinity of the Auxiliary Dam (Reservoir "D"), on the West Branch of the Croton river, near Carmel, New York, be and hereby is awarded to S. E. Nichols at his bid of $532, it being the lowest bid received for doing said work.

The same was adopted by the following vote :

Affirmative—The Commissioner of Public Works, and Commissioners Duane, Tucker and Scott—4.

The Committee also presented the following communication received from the Chief Engineer :

NEW YORK, September 8, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—The work at Shaft 21 is now finished, and, in order to complete the final estimate for Section 10B, which you verbally requested me to present to you as early as practicable, it became necessary to grade and finish the ground adjacent to Shaft 19⅚.

I asked for bids for the same, and received two, as follows :

Names of Bidders.	Amounts Bid.
Edward Berrigan	$200 00
William H. Baker	125 00

Inasmuch as the bid of William H. Baker is within the limits of the bid of the original contractors, and is reasonable, I ordered him to proceed with the work, and I ask you to approve of my action.

I am, respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution :

Resolved, That the action of the Chief Engineer, in accepting the bid of William H. Baker for grading and finishing the grounds adjacent to Shaft No. 19⅚ of the New Croton Aqueduct, amounting to one hundred and twenty-five dollars, the same being the lowest bid received for doing said work, be and the same is hereby approved.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, Application has been made by John M. Waddle, contractor, for an extension of time for building the blow-off at Shaft No. 24, on Section A of the New Croton Aqueduct, and the Chief Engineer having recommended that an extension of time to January 1, 1892, be granted ; therefore

Resolved, That the Aqueduct Commissioners hereby grant to John M. Waddle, contractor, an extension of time to January 1, 1892, in which to complete the contract above referred to, providing his bondsmen shall, within ten days from the date hereof, enter into stipulations continuing their

obligations for and during the completion of said contract under said extension of time, which is hereby allowed to him as further time for the performance of said contract.

The same was adopted by the following vote :

Affirmative—The Commissioner of Public Works, and Commissioners Duane, Tucker and Scott—4.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, the positions of Clerk and Messenger in the office of the Chief Engineer of the Aqueduct Commissioners, now held by George B. Bosworth and Charles Thomas, respectively, be and hereby are abolished, the same to take effect on September 30, 1891, and the services of said Bosworth and Thomas are hereby dispensed with from and after said date.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Chief Engineer of this Commission has certified in writing, under date of September 8, 1891, that Coldwell, Wilcox & Co. have completely performed and carried out the provisions of the contract made by them with this Commission on the 8th day of October, 1890, for constructing a pivot-gate, with necessary appliances, for the tunnel-gate chamber at Bog Brook Dam No. 1, and has stated from actual measurements the whole amount of work done and materials furnished, under and according to the terms of said contract, and of the true value thereof; now, therefore, be it

Resolved, That the Aqueduct Commissioners do accept the work done and materials furnished by Coldwell, Wilcox & Co., under the contract above referred to, and direct that a proper voucher for the final payment for work done and materials furnished, under said agreement, be approved by the Aqueduct Commissioners, and certified to the Comptroller for payment ; and the Comptroller is hereby requested to pay the amount of said final estimate without any deduction for overtime.

The same was adopted by the following vote :

Affirmative—The Commissioner of Public Works, and Commissioners Duane, Tucker and Scott—4.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Chief Engineer of this Commission has certified in writing, under date of September 8, 1891, that Heman Clark has completely performed and carried out the provisions of the contract made by him with this Commission on the 18th day of December, 1884, for constructing Section No. 10B of the New Croton Aqueduct, and has stated from actual measurements the whole amount of work done and materials furnished under and according to the terms of said contract, and of the true value thereof; now, therefore, be it

Resolved, That the Aqueduct Commissioners do accept the work done and materials furnished by Heman Clark, under the contract above referred to, and direct that a proper voucher for the final payment for work done and materials furnished under said agreement be approved by the Aqueduct Commissioners and certified to the Comptroller for payment; and the Comptroller is

hereby requested to pay the amount of said final estimate after deducting therefrom the sum of thirty-five thousand two hundred and forty-eight dollars and fifty-one cents to reimburse the City for the actual loss or damage provable upon said section for superintending said work from the date of the last extension of time for the completion of said work up to the date when said section was finally accepted; and the further sum of one thousand seven hundred and eighty-five dollars and eighty-one cents, being the cost of the work done in the completion of the contract by the Aqueduct Commissioners, under Clause P of the contract.

The same was adopted by the following vote:

Affirmative—The Commissioner of Public Works, and Commissioners Duane, Tucker and Scott—4.

The Commitee also recommened the adoption of the following preamble and resolution:

Whereas, The Chief Engineer of this Commission has certified in writing, under date of September 8, 1891, that O'Brien & Clark have completely performed and carried out the provisions of the contract made by them with this Commission on the 18th day of December, 1884, for constructing Section No. 9 of the New Croton Aqueduct, and has stated from actual measurements the whole amount of work done and materials furnished under and according to the terms of said contract, and of the true value thereof; now, therefore, be it

Resolved, That the Aqueduct Commissioners do accept the work done and materials furnished by O'Brien & Clark, under the contract above referred to, and direct that a proper voucher for the final payment for work done and materials furnished under said agreement be approved by the Aqueduct Commissioners and certified to the Comptroller for payment; and the Comptroller is hereby requested to pay the amount of said final estimate after deducting therefrom the sum of $48,851.33 to reimburse the City for the actual loss or damage provable upon said section for superintending said work from the date of the last extension of time for the completion of said work up to the date when said section was finally accepted.

The same was adopted by the following vote:

Affirmative—The Commissioner of Public Works, and Commissioners Duane, Tucker and Scott—4.

The Committee also presented the following reports, received from the Chief Engineer, and recommended that the same be spread in full on the minutes and filed:

NEW YORK, September 8, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—The following communication is submitted in obedience to the resolution passed by the Aqueduct Commissioners on August 26, 1891, on the subject of the quality of the water supplied to the City of New York.

Your directions to the Chief Engineer are as follows:

1st. "To examine into the question of contamination of the water supply of this city from the Croton Valley, as reported by the Health authorities."

Naturally, the watershed of the Croton river is favorable to the development of a large water-supply; it contains 377.8 square miles; the upper parts are rocky and precipitous; the rock formation is such as not to introduce any unfavorable elements into the water; an ample superficial

formation of sand and gravel causes a large amount of natural filtration, and chemical analysis shows that the quality of the water is good.

On the whole, when compared with other cities which, owing to their location and to their size, must necessarily derive their supply from surface waters, the City of New York is well provided for by nature.

The development of the watershed for the accumulation of the water, as well as for the increasing settlement of the population, has brought different conditions.

The impounding of large quantities of water necessary for the equalization of the water-supply favors to a large extent the subsidence and dilution of extraneous matters, a result the importance of which must not be undervalued, but it causes at times the formation of vegetable growths which impair the taste of the water.

Of all causes of depreciation of the quality of water, the most important is obviously the free flow into the water-courses of liquids charged with the refuse matters from the most populated portions of the watershed. These sources of pollution have been thoroughly investigated at divers times by the health authorities; the report of the State Board of Health of 1889, especially, presented the subject with great thoroughness, and the present examination of the Health Department of the City is confirming their findings. They cover a very extensive ground, from the nuisances found on distant farms and small initial water-courses to the factories and towns where the sewage is concentrated and emptied into the main streams. There lies the greatest danger to the quality of the city's water supply.

I notice that Messrs. Martin and Beebe of the Health Department report that "the water in the Sodom Reservoir appears to be grossly contaminated with organic matter of vegetable origin." This statement seems to imply neglect on the part of the Aqueduct Commissioners and certainly gives to the public a very erroneous idea of the condition of things. It is a fact, well known to those conversant with such matters, that during the first years which follow the flooding of a new reservoir in our climate, the water issuing from it always disengages sulphureted hydrogen; high authorities differ as to the cause of it, but it is generally agreed that the chemical action which produces that phenomenon does not introduce any dangerous elements in the water, and as to the gas proper, the water is freed from it after running a few hundred feet in the air.

Sodom Reservoir has been treated as is usually done in good practice; the trees and bushes have been cut down to the ground and the weeds and high grass have been burned.

It would certainly be preferable to excavate all the surface soil from the reservoir grounds and to leave only the gravel and sand exposed, but it is doubtful whether the large expense involved in that operation would be justified by the results. Important reservoirs thus treated are known to have shown the same disengagement of sulphureted hydrogen or other contaminations generally attributed to the presence of decaying vegetation. Moreover, it is only a question of time when the deposits from the water contained would form a new layer of soil at the bottom.

On the whole, although the absolute necessity of checking the contamination of the water-shed must be recognized, it is a fact that the population of the Croton water-shed is comparatively small in proportion to the area, that the chemical analysis does not show the water to be unwholesome and that it is not inferior to what it has been for years. The examination of the water would have been more complete and more reliable as to its fitness for drinking purposes if the Health Department had instituted a biological search in addition to its numerous chemical analyses.

Although it is to be regretted that it has been made to appear, to the discomfort of many of our citizens, that the present condition of our water-supply is now exceptionally dangerous, it may be hoped that the agitation thus created will result in some wise provision for the systematic purification of the supply.

2d. "To report whether any measures can be taken by this Commission to mitigate present conditions."

The Act (chapter 490, of the Laws of 1883), from which the Aqueduct Commissioners derive their powers, does not appear to give them jurisdiction beyond the grounds involved in the construction of the work under their charge; the same limits must consequently obtain as to their jurisdiction in sanitary matters.

A number of features have been introduced in the design of the work under your direction for the purpose of promoting the purity of the supply; pre-eminent among them is the large scale on which you have provided for the additional amount of storage capacity.

An ample storage will give facilities for the selection of water for the city's supply at times when there may be local growths of algæ and other temporary contamination; it is calculated to prevent in a dry year an excessive lowering of the surface of the reservoirs, a practice which should obviously be avoided, and it increases the chances of dilution and of subsidence, the influence of which we have reasons to suppose may extend to the destruction of the germs of disease.

As an additional safeguard, it may not be out of place to call your attention to the desirability of securing additional land on the margin of the new reservoirs. Whatever may be the means ultimately adopted for purifying the supply, it is plain that a wider margin around the basins would facilitate the work.

I have in the preceding remarks touched on the objection of the representatives of the Health Department to the presence of vegetation in the reservoirs, and on the large expense of a partial remedy; I may also, in this connection, refer to the practice adopted elsewhere of excavating the most shallow parts of the storage reservoirs, and of forming with the same materials steeper shores properly protected. There can be no question that this practice is beneficial, but it only diminishes an objectionable feature without wholly curing it, for new shallows must form when the water is drawn down, and, as in the former case, it is doubtful whether the result would justify the great cost involved. It would be well, however, to examine those points in all their bearings.

3d. "If it is found that it is not within the power of the Commission to take action in the matter, to report what, in his opinion, can be done by legislation or otherwise to correct existing evils."

It is imperative that the flowing of polluted waters into the water-courses should cease, as from that source may come the greatest danger to public health. Water may be turbid, it may have a bad taste and odor, and yet not be dangerous to health, but the most dangerous form of filth is human excrement, as it may contain germs of disease which will be carried by water.

Proper legislation only can stop the contamination of the water-supply by the objectionable drainage which is thrown into the water-courses. You are conversant with the previous attempts made in that line, with the regulations promulgated by the State Board of Health under legislative authority, and with the reactionary legislation which stopped the incipient work of reform.

The interests of New York on one side and of the towns established on the watershed on the other, in the matter of sanitary regulations, are not wholly antagonistic. The towns must recognize the fact that even if New York were not procuring its water-supply from their neighborhood, they have some duties to perform as to their sanitary conditions which they must promote by their own exertions. When, however, additional obligations and expenditures are found necessary for the benefit of New York, it is only just that the burden of the same should fall upon the latter.

The policy heretofore advocated has been one of prevention only, as indicated by the regulations of the State Board of Health, and it is thought that it should be preserved for isolated places and for small settlements distant from the water-courses.

For large settlements, especially for those on the water-courses, preventing measures could not be enforced justly or successfully; the objectionable drainage or refuse should be collected and disposed of in the best manner adapted to each case.

For the most numerous communities it would become necessary to collect the sewage, to divert it by pumping or by other means, and to purify it by chemical methods or by filtration through the ground before returning it to the stream.

It is premature to make at present any suggestion as to the question of apportionment of the necessary expenditure which could be properly regulated by legislative action.

Respectfully submitted,

(Signed) A. FTELEY, Chief Engineer.

NEW YORK, September 8, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—The following is written in obedience to a resolution passed by the Aqueduct Commissioners on September 2, 1891, viz:

"Resolved, That the Chief Engineer be and hereby is instructed to examine and report to the Aqueduct Commissioners at their next meeting whether or not there are any nuisances on city property in the Croton Valley which are now contaminating or may hereafter contaminate the water, and if any be found to take the necessary steps to abate such nuisances at once."

From the fact that the above resolution directs your Engineer to take the necessary steps to abate at once such nuisances as may exist on city property, I understand that the Aqueduct Commissioners referred therein to such nuisances as are on city property under your control.

In a report bearing even date I have given my views on the general features of the pollution of the water-shed.

At Sodom and Bog Brook Dams a number of privies have been reported by the Board of Health which are not within the limits fixed by its regulation, although they will be when the reservoir is wholly filled. The larger number of the buildings referred to are to be removed before Spring. Such places as are not now in legitimate use have, however, been obliterated.

There are on the City's lands several places occupied by the contractors which did not wholly comply with the Health regulations. These defects are now being remedied.

At Carmel, on the City's grounds, the contractors' workmen have used the adjacent stream for the purpose of washing clothes. This practice has been ordered discontinued.

Outside of the City's limits several cases in connection with the contractors' buildings require correction, and are now being abated.

Respectfully submitted,

A. FTELEY, Chief Engineer.

On motion of Commissioner Tucker, the recommendation was approved.

On motion of Commissioner Scott, action on the resolutions requiring Michael S. Coleman and David R. Paige & Co. to show cause why the completion of the work on the dams under contract to them should not be done by the Aqueduct Commissioners was postponed for two weeks.

The Commissioners then adjourned.

J. C. LULLEY, Secretary pro tem.

AQUEDUCT COMMISSION.

Minutes of Special Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Monday, September 21, 1891, at 3 o'clock P. M.

Present—The Comptroller, and Commissioners Duane, Tucker and Scott.

The Committee of Finance and Audit reported their examination and audit of Vouchers Nos. 7259 to 7267, inclusive, amounting to $41,546.25, being estimates for work done by contractors.

On motion of Commissioner Scott, the same were approved and ordered certified to the Comptroller for payment.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, September 23, 1891, at 3 o'clock P. M.

Present—The Comptroller, and Commissioners Duane, Tucker, Scott and Cannon.

The Construction or Executive Committee presented the following:

The Construction or Executive Committee report:

That at a meeting of said Committee, held on September 22, 1891, the following resolution was adopted, and they now ask your approval of their said action:

"Resolved, That the bid-box be closed, and the keys given to the President; and that the Secretary be authorized by this Commission to receive the bids for grading, improving and fencing the grounds at several of the shafts of the New Croton Aqueduct; also for grading, improving and fencing the grounds of the One Hundred and Thirty-fifth Street Gate-house of the New Croton Aqueduct, as called for in the approved forms of contract and specifications on file in the office of the Aqueduct Commissioners; also to receive the checks of the bidders, and to make the necessary preparations for opening the bids received for doing said work under the law."

On motion of Commissioner Scott, the action of the Committee was approved.

In pursuance to the following notice, published daily for fifteen consecutive days, commencing with September 4, 1891, in the CITY RECORD, New York "World" and "Commercial Advertiser," bids were received for grading, improving and fencing the grounds at several of the shafts of the New Croton Aqueduct; also for grading, improving and fencing the grounds of the One Hundred and Thirty-fifth Street Gate-house of the New Croton Aqueduct:

AQUEDUCT COMMISSIONERS' OFFICE,
ROOM 209, STEWART BUILDING, No. 280 BROADWAY,
NEW YORK, September 4, 1891.

To Contractors.

Bids or proposals for grading, improving and fencing the grounds at several of the shafts of the New Croton Aqueduct; also for grading, improving and fencing the grounds of the One Hundred and Thirty-fifth Street Gate-house of the New Croton Aqueduct, as called for in the approved

forms of contract and specifications on file in the office of the Aqueduct Commissioners, will be received at this office until 3 o'clock P. M. on Wednesday, September 23, 1891, at which place and hour they will be publicly opened by the Aqueduct Commissioners, and the award for doing said work will be made by said Commissioners as soon thereafter as possible.

Blank forms of contract and specifications for doing said work, and bids or proposals, and proper envelopes for their inclosure, can be obtained at the above office of the Aqueduct Commissioners on application to the Secretary.

By order of the Aqueduct Commissioners.

JAMES C. DUANE, President.

JOHN C. SHEEHAN, Secretary.

The following bids, upon which the required deposits had been made, were then opened and read aloud by the Secretary:

For Grading, Improving and Fencing the Grounds of the One Hundred and Thirty-fifth Street Gate-house.

1. John J. Hopper	$9,522 50
2. John Twiname	9,397 50
3. Joseph Moore	10,762 50
4. P. J. Moran	7,016 25

For Grading, Improving and Fencing the Grounds at several of the Shafts of the New Croton Aqueduct.

1. McCormick & Carpenter	$32,630 83
2. John Twiname	36,589 80
3. Rider & Dougherty	30,167 80
4. John F. Gaynor	34,974 85
5. Levi & Company	35,867 81
6. F. V. Smith	36,817 72
7. Joseph Moore	62,639 50
8. P. J. Moran	47,291 77

Whereupon, on motion of Commissioner Scott, the following preamble and resolution was adopted:

Whereas, Bids for grading, improving and fencing the grounds at several of the shafts of the New Croton Aqueduct, also for grading, improving and fencing the grounds of the One Hundred and Thirty-fifth Street Gate-house of the New Croton Aqueduct, having been received and publicly opened and read; therefore

Resolved, That the Chief Engineer is hereby directed to have said bids calculated and tabulated, and submit the same, together with his estimates of the work, at a meeting of the Construction or Executive Committee of the Aqueduct Commissioners, for consideration and canvassing by them, at 3 o'clock P. M. on the 29th day of September, 1891; and the bids and checks of the bid-

ders are hereby referred to the Committee of Finance and Audit for examination and report to the Commissioners as to their formality and the sufficiency of the sureties proposed by the bidders.

The Committee of Finance and Audit reported their examination and audit of Vouchers Nos. 7283 to 7286, inclusive, being estimates for work done by contractors, amounting to $91,636.77; also of bills contained in Vouchers Nos. 7268 to 7282, inclusive, amounting to $1,693.59.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following communication, received from the Chief Engineer, and recommended that the same be spread in full on the minutes and filed:

NEW YORK, September 15, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—Since my last report, dated the 8th instant, the flow of water from Sodom Dam has been maintained at the rate of 50,000,000 gallons per twenty-four hours, lowering thereby the surface of the reservoir 4.68 feet. The water is now 23.25 feet lower than it was when the gates were opened for the first time.

I am, very respectfully,

A. FTELEY, Chief Engineer.

On motion of Commissioner Tucker, the recommendation was approved.

The Committee also presented the following communication, received from the Health Department:

HEALTH DEPARTMENT, No. 301 MOTT STREET,
NEW YORK, August 26, 1891.

JOHN C. SHEEHAN, Esq., *Secretary, Aqueduct Commission, Stewart Building, New York:*

SIR—At a meeting of the Board of Health of the Health Department, held on the 25th instant, the following resolution was adopted:

"Resolved, That a copy of the report of Inspectors Martin and Beebe be forwarded to the Commissioners in charge of the New Croton Aqueduct, with the request that they take immediate measures for the removal of any nuisances on City property which is under their control that may in any way contaminate the water supply of this city."

A true copy.

EMMONS CLARK, Secretary.

—and recommended the adoption of the following resolution:

Resolved, That the Secretary be and hereby is directed to communicate with the Health Department and notify them that a meeting of the Aqueduct Commissioners, held on September 2, 1891, a resolution was adopted ordering and directing the abatement of all nuisances that may exist on City property under their control; and that the work of abating such nuisances is now being conducted under the direction of the Chief Engineer.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following resolution:

Resolved, That, upon the recommendation of the Chief Engineer, the services of James E. Kearns, Assistant Journeyman Machinist, and Daniel Manning, Laborer, be and hereby are dispensed with on October 1 next.

On motion of Commissioner Tucker, the same was adopted.

The Committee also presented the resignation of Assistant Engineer W. S. Humbert, and recommended that the same be accepted, to take effect on the 21st instant.

On motion of Commissioner Tucker, the same was accepted.

The Committee also presented the following communication, received from the Chief Engineer:

NEW YORK, September 21, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—The resignation of Assistant Engineer Humbert at this time, so soon after the resignation of Division Engineer Burbank, calls for the transfer of a sub-assistant to partly make up for the vacancies created.

I desire to detail to that position Leveler A. S. Nye, who is now detached from this office, to assist the Yonkers party.

Mr. Nye, although having the rank of Leveler, has only Computer's pay, viz., $75 per month; and I respectfully recommend that, after being transferred, he be given the full pay of his rank, viz., $100 per month.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution:

Resolved, That, upon the foregoing recommendation of the Chief Engineer, the salary of Leveler A. S. Nye be increased from seventy-five to one hundred dollars per month, upon his transfer to duty at the Bog Brook Dams, that being the established rate of pay for Levelers.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following resolution:

Resolved, That the action of the Chief Engineer in assigning Thomas T. Craven to duty as a Laborer to assist the engineering party at the Carmel Dam, on the 21st instant, at $2 per day, be and hereby is approved.

On motion of Commissioner Scott, the same was adopted.

The Committee also presented the following communication, received from the Chief Engineer:

NEW YORK, September 18, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—In pursuance of the authority granted by the Aqueduct Commissioners on August 19 last, for the abatement of the nuisance at Ardsley, I beg to report that I have received four bids for the work, as follows:

NAMES OF BIDDERS.	PRICE PER CUBIC YARD.	TOTAL AMOUNT BASED ON ESTIMATE OF 900 CUBIC YARDS.
Edward Berrigan	60 cents.	$540 00
William H. Baker	45 "	405 00
Edward Fey	40 "	360 00
John Egan	38 "	342 00

I have ordered the lowest bidder (John Egan), to proceed immediately with the work.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution:

Resolved, That the action of the Chief Engineer, in ordering John Egan to do the work of abating the nuisance existing on City property at Ardsley, at the bid of $342, it being the lowest bid received, be and hereby is approved.

On motion of Commissioner Scott, the same was adopted.

The Committee also presented the following communication, received from the Chief Engineer:

NEW YORK, September 22, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—In conformity with the practice followed heretofore for the sundry machinery connected with the dams and other works which should be built only by those experienced in that kind of work, I have asked six firms to make a tender for furnishing and placing six sets of lifting machinery for Sodom and Bog Brook Dams, my estimate for the same being $2,000.

I now submit for your consideration five bids, received this day, as follows, viz.:

Names of Bidders.	Amounts Bid.
1. John Fox	$1,460 00
2. Coldwell, Wilcox & Co	1,984 00
3. Joseph Edwards & Co	2,532 00
4. N. J. Foundry & Machine Co	2,556 00
5. Jonson Foundry & Machine Co	3,730 00

The lowest bidder (John Fox) having already furnished machinery of the same kind of a satisfactory character, and his price being very reasonable, I beg leave to recommend that the work be ordered from him for the sum of $1,460.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution:

Resolved, That, upon the recommendation of the Chief Engineer, the contract for furnishing and placing six sets of lifting machinery for Sodom and Bog Brook Dams is hereby awarded to John Fox at his bid of one thousand four hundred and sixty dollars, it being the lowest bid received for doing said work and less than the estimate of the Chief Engineer; the Aqueduct Commissioners

being satisfied that the best interests of the City would be consulted by approving of the recommendation of the Chief Engineer.

The same was adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4. The Comptroller not voting.

The Committee also recommended the adoption of the following resolution:

Resolved, That that part of the resolution adopted by the Aqueduct Commissioners on September 9, 1891, dispensing with the services of George B. Bosworth, employed as Clerk in the office of the Chief Engineer, from and after September 30, 1891, be and the same is hereby reconsidered and rescinded.

On motion of Commissioner Scott, the same was adopted.

On motion of Commissioner Scott, that part of the communication of the Chief Engineer recommending the dispensing of the services of said Bosworth was referred back to the Construction or Executive Committee.

The Committee also recommended that the following preamble and resolution, adopted on September 9, 1891, be and the same is hereby reconsidered:

"Whereas, The Chief Engineer of this Commission has certified in writing, under date of September 8, 1891, that O'Brien & Clark have completely performed and carried out the provisions of the contract made by them with this Commission on the 18th day of December, 1884, for constructing Section No. 9 of the New Croton Aqueduct, and has stated from actual measurements the whole amount of work done and materials furnished under and according to the terms of said contract, and of the true value thereof; now, therefore, be it

"Resolved, That the Aqueduct Commissioners do accept the work done and materials furnished by O'Brien & Clark, under the contract above referred to, and direct that a proper voucher for the final payment for work done and materials furnished under said agreement be approved by the Aqueduct Commissioners and certified to the Comptroller for payment; and the Comptroller is hereby requested to pay the amount of said final estimate after deducting therefrom the sum of forty-eight thousand eight hundred and fifty-one dollars and thirty-three cents to reimburse the City for the actual loss or damage provable upon said section for superintending said work from the date of the last extension of time for the completion of said work up to the date when said section was finally accepted."

On motion of Commissioner Scott, the recommendation was approved.

The Committee also recommended the adoption of the following preambles and resolution:

Whereas, The Chief Engineer of this Commission has certified in writing, under date of September 8, 1891, that O'Brien & Clark have completely performed and carried out the provisions of the contract made by them with this Commission on the 18th day of December, 1884, for constructing Section No. 9 of the New Aqueduct, and has stated from actual measurements the whole amount of work done and materials furnished under and according to the terms of said contract, and of the true value thereof; and

Whereas, The Aqueduct Commissioners heretofore requested the Comptroller to deduct from Estimate No. 70½ the sum of fifty thousand eight hundred dollars to defray the expenses of superintendence on said section, from November 9, 1888, the date of the last extension of time, to the time when the contract for the construction of said section was actually completed ; and

Whereas, There is now due to said contractors, exclusive of the sum so deducted for the cost of superintendence, the sum of twenty-three thousand five hundred and forty-four dollars and eighty-eight cents ; therefore,

Resolved, That the Aqueduct Commissioners do accept the work done and materials furnished by O'Brien & Clark, under the contract above referred to, and direct that a proper voucher for the final payment for work done and materials furnished under said agreement be approved by the Aqueduct Commissioners and certified to the Comptroller for payment ; and the Comptroller is hereby requested to pay the amount of said final estimate, namely, twenty-three thousand five hundred and forty-four dollars and eighty-eight cents, which is exclusive of the sum already retained out of Estimate No. 70½, dated December 10, 1890, returned for payment by the Chief Engineer for the actual loss or damage provable upon said section for superintending said work from the date of the last extension of time for the completion of said work up to the date when said section was finally accepted.

The same were adopted by the following vote :

Affirmative--Commissioners Duane, Tucker, Scott and Cannon—4. The Comptroller not voting.

The Committee also presented the following communication, received from the Chief Engineer :

NEW YORK, September 22, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—The dwelling houses in the vicinity of the water-line of Sodom Reservoir, viz. : the Yale house, occupied this day as an office by the Engineer Corps, and the Barnum house, together with eight (8) minor buildings, outhouses, etc. (ten in all), should be removed from the vicinity of the reservoir. This is to ask you to direct the sale of the said buildings on the condition that they be removed before January 1, 1892.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution :

Resolved, That the Secretary be and he is hereby directed to take the necessary steps to provide for a sale of the buildings above referred to, at public auction, in the manner provided for by law ; and the money realized from the same to be transmitted to the Comptroller to be credited to the Sinking Fund Commissioners.

On motion of Commissioner Scott, the same was adopted.

The Committee also presented the following :

The Construction or Executive Committee report:

That they have been notified by Masten & Nichols, Attorneys, of the assignment of Clinton Stephens as executor under the last will and testament of John Sullivan, deceased, Albert L. Rider

and Patrick J. Dougherty, of $4,000 of the moneys due or to grow due under a certain contract, dated December 30, 1887, made with the Mayor, Aldermen and Commonalty of the City of New York for the construction of a dam and its appurtenances on the East Branch of the Croton river, in the town of South East, Putnam County, New York, to the American Cement Company of the State of New Jersey; and inasmuch as the contract for doing said work provides that the contractors shall not assign, by power of attorney or otherwise, unless by and with the consent of the Aqueduct Commissioners, and your Committee being satisfied that it will be to the interests of the work and beneficial to the City of New York that said consent be given, we recommend the adoption of the following resolution:

Resolved, That the Aqueduct Commissioners hereby assent and consent to the assigning of the sum of four thousand dollars that may become due to Sullivan, Rider & Dougherty under and in pursuance of a certain contract, bearing date December 30, 1887, for the construction of a dam and its appurtenances on the East Branch of the Croton river in the Town of South East, Putnam County, New York.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following preamble and resolution:

Whereas, The Chief Engineer of this Commission has certified, under date of September 23, 1891, that William H. Baker has completely performed and carried out the provisions of the contract made by him with this Commission on the 21st day of August, 1891, for finishing Shaft No. 21, on Section 10B of the New Aqueduct, and has stated from actual measurements the whole amount of work done and materials furnished under and according to the terms of said contract, and of the true value thereof; now, therefore, be it

Resolved, That the Aqueduct Commissioners do accept the work done and materials furnished by William H. Baker, under the contract above referred to, and direct that a proper voucher for the final payment for work done and materials furnished under said agreement be approved by the Aqueduct Commissioners and certified to the Comptroller for payment; and the Comptroller is hereby requested to pay the amount of said final estimate without any deduction for overtime.

The same was adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4. The Comptroller not voting.

The Committee also presented the following communication, received from the Chief Engineer:

NEW YORK, September 23, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—I submit herewith my estimates in detail for the work of grading, improving and fencing the grounds of the One Hundred and Thirty-fifth Street Gate-house, and for the work of grading, improving and fencing the grounds at several of the shafts.

The total amount of my estimate for the first-named work is $8,530, and my estimate for the second work is $28,519.80.

I am, very respectfully,

A. FTELEY, Chief Engineer.

On motion of Commissioner Tucker, the same was ordered filed.

The Secretary presented the following:

BOARD OF ESTIMATE AND APPORTIONMENT,
CITY OF NEW YORK.

Whereas, The Aqueduct Commissioners desire to extend the leases of Rooms Nos. 206, 207, 209, 211, 213, 214, 215, 216 and 217, in the Stewart Building, now occupied as offices of the Aqueduct Commission, for the term of one year from May 1, 1891, at a yearly rental of ten thousand two hundred dollars ($10,200), and the owner, Henry Hilton, has agreed to such extension.

Resolved, That in pursuance of section 41 of chapter 490, Laws of 1883, the Board of Estimate and Apportionment hereby approves of the releasing or extension of the leases of said rooms for the further term of one year from May 1, 1891, at the yearly rental of ten thousand two hundred dollars ($10,200).

A true copy of preamble and resolution adopted by the Board of Estimate and Apportionment September 9, 1891.

CHAS. V. ADEE, Clerk.

On motion of Commissioner Scott, the same was ordered filed.

The Comptroller, under date of August 31, 1891, gave notice of the issue of warrants for the payment of vouchers not certified to by the Aqueduct Commissioners, for—

New York County Section	$29,091 66
Westchester County Section	170 66
Sodom Dam and Reservoirs	453 69
Reservoir "D."	2,495 05
Manhattan Island Section—Additional lands	6,301 88
Reservoir "M."	125 25
Westchester County Section	65,927 39
Westchester County Section—Additional lands	1,702 56
Manhattan Island Section—Additional lands	790 30
New York Section—Additional lands	95 00
Double Reservoir "I"—Putnam County	1,440 93
Westchester County Section—Additional lands	18 50
Westchester County Section	271 73

—leaving a balance to the credit of "Additional Water Fund" of $74,597.25.

Which were ordered entered upon the books of the Commission and filed.

On motion of Commissioner Scott, the minutes of meetings of August 19 and 26, September 2 and 9, 1891, were ordered approved.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, September 30, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

The Committee of Finance and Audit reported their examination and audit of bills contained in Vouchers Nos. 7292 to 7310, inclusive, amounting to $1,082.59; also of Voucher No. 7311, being final estimate for finishing Shaft No. 21 of the New Aqueduct, amounting to $1,660.81.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Committee also presented the following:

The Committee of Finance and Audit report:

That they have examined the bids and checks received September 23, 1891, for grading, improving and fencing the grounds of the New Croton Aqueduct, as follows:

1st. Of the One Hundred and Thirty-fifth Street Gate-house.

2d. At several of the shafts.

The checks, amounting to $8,850, were correct, and transmitted to the Comptroller, and his receipt is on file.

The bids were found correct as to their formality, and the sureties proposed appear to be sufficient.

On motion of Commissioner Scott, the same was ordered filed.

The Construction or Executive Committee presented the following communication, received from the Chief Engineer, and recommended that the same be spread in full on the minutes and filed:

NEW YORK, September 29, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—Since my last report, dated the 15th instant, the flow of water from Sodom Dam has been maintained at the rate of 50,000,000 gallons per 24 hours, lowering thereby the surface of

the reservoir 6.52 feet. The water is now 29.77 feet lower than it was when the gates were opened for the first time.

I am, very respectfully,

A. FTELEY, Chief Engineer.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, the services of Axeman William Horton, whose leave of absence without pay will expire on October 1 next, are hereby dispensed with on and after said date.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That the action of the Chief Engineer in assigning E. M. Smith to duty as a Laborer under Division Engineer Gowen at Purdy's Station, N. Y., at two dollars per day, to date from the 28th instant, be and hereby is approved.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That in view of the additional duties imposed upon William B. Guilfoyle, employed as Stenographer and Typewriter in the office of the Chief Engineer of the Aqueduct Commissioners, owing to the decrease of the clerical help in said office, the salary of said Guilfoyle be and hereby is increased from eighty-five to one hundred dollars per month, that being the salary paid to his predecessor in office.

On motion of Commissioner Scott, the same was adopted.

The Committee also presented the following communication, received from the Chief Engineer :

NEW YORK, September 29, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—The new roads around the Brewster Reservoirs were finished last year, and I understood from Mr. Dykman that a commission would be designated to determine the time when they must pass from your jurisdiction into that of the town's. I was waiting for such time to ask you to put the roads in final order before transferring them. I now learn that the formality above mentioned is not to take place, and this is to ask you to authorize me to employ labor to put the roads in order before winter, so that we can notify the town authorities of their completion. The cost of the work will be, in my opinion, under $750.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution :

Resolved, That authority is hereby given to the Chief Engineer to employ the necessary labor to do the work above referred to, and an appropriation of seven hundred and fifty dollars is hereby made to cover the expense thereof.

The same was adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also recommended the adoption of the following resolution :

Resolved, That the contract for grading, improving and fencing the grounds of the One Hundred and Thirty-fifth Street Gate-house of the New Croton Aqueduct be and hereby is awarded to P. J. Moran, at his bid of seven thousand and sixteen dollars and twenty-five cents, it being the lowest bid received for doing said work, and less than the estimate of the Chief Engineer.

The same was adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also recommended the adoption of the following resolution :

Resolved, That all of the bids received for grading, improving and fencing the grounds of several of the shafts of the New Aqueduct be and the same are hereby rejected, owing to the fact that the lowest of said bids is higher than the estimate of the Chief Engineer, and the President and Secretary are hereby directed to readvertise for bids for doing said work.

The same was adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also recommended the adoption of the following resolution :

Resolved, That the Secretary be and he is hereby directed to fix the date for the completion of the contract for grading, improving and fencing the grounds of several of the shafts of the New Aqueduct for June 1, 1892, instead of December 31, 1891.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following preambles and resolution :

Whereas, On the 22d day of September, 1891, John M. Waddle, the contractor for building the blow-off at Shaft No. 24, on Section No. 11A of the New Aqueduct, notified the Aqueduct Commissioners that he desired to assign the contract for doing said work to John F. Gaynor, of Syracuse, New York, and requested the Aqueduct Commissioners to approve of said assignment ; and

Whereas, The Aqueduct Commissioners, after having given the matter careful examination and being satisfied that it will be beneficial to the city to assent to said assignment, we recommend the adoption of the following resolution :

Resolved, That the Aqueduct Commissioners do hereby assent and consent to the assignment of the contract for building the blow-off at Shaft No. 24, on Section No. 11A of the New Aqueduct, to John F. Gaynor, of Syracuse, New York, providing the bondsmen for the doing of said work assent thereto ; and in case of their refusal to assent thereto, that said Gaynor furnish other bondsmen who shall be satisfactory to the Aqueduct Commissioners.

The same was adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon 4.

The Committee also recommend the adoption of the following preambles and resolution :

Whereas, The Chief Engineer of this Commission has certified in writing, under date of September 29, 1891, that O'Brien & Clark have completely performed and carried out the provisions of

the contract made by them with this Commission on the 17th day of May, 1888, for constructing Section 16 of the New Aqueduct, and has stated from actual measurements the whole amount of work done and materials furnished under and according to the terms of said contract, and of the true value thereof; and

Whereas, Paragraphs A, B and C of clause O of said contract authorize and empower the Aqueduct Commissioners to retain out of the final installment of money which shall become due for the construction of said section a sum equal to five per cent. of the whole amount of money payable by the Aqueduct Commissioners, and expend the same for making such repairs as may become necessary, and referred to in said paragraphs of said clause of said contract; and the Aqueduct Commissioners having availed themselves of the provisions of clause O of said contract, we recommend the adoption of the following resolution:

Resolved, That the Aqueduct Commissioners do accept the work done and materials furnished by O'Brien & Clark, under the contract above referred to, and direct that a proper voucher for the final payment for work to be done and materials furnished under said agreement be approved by the Aqueduct Commissioners and certified to the Comptroller for payment; and the Comptroller is hereby requested to pay the amount of said final estimate, viz.: Fifty thousand six hundred and sixty-one dollars and three cents, without any deduction for overtime.

The same was adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Secretary presented the following:

CITY OF NEW YORK—FINANCE DEPARTMENT,
COMPTROLLER'S OFFICE,
September 30, 1891.

JOHN C. SHEEHAN, Esq., *Secretary, etc.:*

DEAR SIR—The following issues of Additional Water Stock have been made since last report, viz.:

August 21, 1891	$100,000 00
September 14, 1891	100,000 00
Total	$200,000 00

Taken by the Commissioners of the Sinking Fund at par.

Respectfully,

I. S. BARRETT, General Bookkeeper.

On motion of Commissioner Cannon, the same was ordered entered upon the books of the Commission and filed.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, October 7, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

The Committee of Finance and Audit reported their examination and audit of Voucher No. 7314, being final estimate for Section 16 of the New Aqueduct, amounting to $50,661.03; also of bills contained in Vouchers Nos. 7315 to 7329, inclusive, amounting to $1,166.67.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following communication, received from the Chief Engineer, and recommended that the same be spread in full on the minutes and filed:

NEW YORK, October 6, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—From the 29th ultimo, the date of my last report, the flow of water from Sodom Dam was continued at the rate of fifty million gallons per twenty-four hours until 8.30 A. M. on October 1, when, at the request of Chief Engineer Birdsall of the Croton Aqueduct, the flow was decreased to thirty million gallons per twenty-four hours, which is the present rate of flow. The water is now 34.31 feet lower than it was when the gates were opened for the first time.

I am, very respectfully,

A. FTELEY, Chief Engineer.

On motion of Commissioner Tucker, the recommendation was approved.

The Committee also recommended the adoption of the following resolution:

Resolved, That the action of the Chief Engineer in assigning Superintendent of Dam Construction A. J. Sparrow to duty under Division Engineer Craven, at Yonkers, on the 5th instant, be and hereby is approved.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following reso'ution :

Resolved, That the action of the Chief Engineer in reappointing Daniel Manning as a Laborer for duty at Shaft No. 25 of the New Aqueduct, his services to commence this day, be and hereby is approved.

On motion of Commissioner Scott, the same was adopted.

The Committee also presented the following comm unication, received from the Chief Engineer :

NEW YORK, October 6, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—The work of improving and grading the grounds around the various shaft sites will soon commence, and it will be necessary for the Engineer in charge of that work to have a proper vehicle for the proper supervision of the same, as our present carriages are too heavy for that service. I understand that a suitable buggy can be purchased for the sum of $100, and I hereby recommend that an appropriation for that amount be made for the same.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution :

Resolved, That an appropriation of one hundred dollars is hereby made to cover the cost of a buggy to be used by the Engineer in charge of the work of grading, improving and fencing the grounds around several of the shafts of the New Croton Aqueduct.

On motion of Commissioner Cannon, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That upon the recommendation of the Chief Engineer, Transitman Frank N. Speyer is hereby recommended to the Civil Service Commission for examination for promotion to the grade of Assistant Engineer.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That upon the recommendation of the Chief Engineer, the accompanying bill of William H. Baker, being for additional work done at Shaft 21 of the New Aqueduct, amounting to eighty-five dollars and fifty cents, be and hereby is approved, and ordered certified to the Comptroller for payment.

The same was adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also recommended the adoption of the following resolution :

Resolved, That the accompanying bill of Coldwell, Wilcox & Co., being for remodeling and resetting an iron grating at the bottom of Shaft No. 11A of the New Aqueduct, amounting to $85.88, be and hereby is approved and ordered certified to the Comptroller for payment.

The same was adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also recommended the adoption of the following resolution:

Resolved, That upon the recommendation of the Chief Engineer, the accompanying bill of the estate of Abram Acker, being for repairs to a buggy belonging to the Aqueduct Commissioners, amounting to $120.50, be and hereby is approved and ordered certified to the Comptroller for payment.

On motion of Commissioner Cannon, the same was adopted.

The Committee also recommended the adoption of the following preamble and resolution:

Whereas, Application has been made by Sullivan, Rider & Dougherty, contractors, for an extension of time for the completion of the East Branch Reservoir Dam; and the Chief Engineer having recommended that an extension of time to March 1, 1892, be granted; therefore,

Resolved, That the Aqueduct Commissioners hereby grant to Sullivan, Rider & Dougherty, contractors, an extension of time to March 1, 1892, in which to complete the contract above referred to, providing their bondsmen shall, within ten days from the date hereof, enter into stipulations continuing their obligations for and during the completion of said contract under said extension of time which is hereby allowed to them as further time for the performance of said contract; and provided also that said contractors will take, at their own expense, all precautions for doing the work in cold weather, as may be ordered by the Engineer, and that they will waive all claims for damages whatsoever on account of any raising or lowering of the water in the reservoir that the Commissioners or their Engineer may order.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following preamble and resolution:

Whereas, The Commissioner of Public Works submitted to the Aqueduct Commissioners, on the 18th day of August, 1885, maps of the property necessary for that part of a reservoir between Quaker Bridge and Croton Dam, marked Exhibit "DD," and the same having been referred to the Chief Engineer for report thereon, and the Chief Engineer having submitted a report, on October 8, 1890, recommending a modification of the plans heretofore submitted to the Aqueduct Commissioners for the construction of a high masonry dam near the mouth of the Croton river, and a public hearing having been given on said modified plans, we recommend the adoption of the following resolution:

Resolved, That, for the more efficient carrying out of the provisions of chapter 490, of the Laws of 1883, of the State of New York, and the acts amendatory thereof, we, the Aqueduct Commissioners, do hereby approve and adopt the amended plans now submitted by the Chief Engineer showing the lands necessary to be taken in order to build a high masonry dam near the mouth of the Croton river, being Parcels 9 to 15, inclusive, 18 to 29, inclusive, 57 and 60; also out of Parcel 6, 20.502 acres; out of Parcel 16, 10.567 acres; out of Parcel 30, .708 of an acre, shown on said maps, submitted on August 18, 1885, and direct that the same be duly certified and filed in this office and designated "Final Plan Sheet, Exhibit No. 5, of 1891;" and that a copy thereof be certified and transmitted to the Commissioner of Public Works for filing in his office, as required by section 2 of the aforesaid act; and the Commissioner of Public Works is hereby requested to trans-

mit the six similar property maps showing the land so required for the construction of said high masonry dam.

The same were adopted by the following vote :

Affirmative– Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also recommended the adoption of the following preambles and resolution :

Whereas, The Commissioner of Public Works informally submitted to the Aqueduct Commissioners, on the 30th day of January, 1884, plans, specifications and estimates for the construction of a high masonry dam near the mouth of the Croton river, which were then considered by the Commissioners ; and

Whereas, A formal report was afterwards, and on the 6th day of February, 1884, presented by the Commissioner of Public Works, with accompanying plans, specifications, estimates and exhibits of the aforesaid high masonry dam, and the same were ordered placed on file for future consideration ; and the Chief Engineer having submitted a report, on October 8, 1890, recommending a modification of the plans heretofore submitted to the Aqueduct Commissioners for the construction of a high masonry dam near the mouth of the Croton river, and a public hearing having been given on said modified plans, we recommend the adoption of the following resolution :

Resolved, That the Commissioner of Public Works be and he is hereby requested to prepare and submit to the Aqueduct Commissioners a modification of the said plans, shown on Exhibits "F," "G" "H," "I" and "K," submitted by the Commissioner of Public Works on January 30, 1884, said modification to be in accordance with the plans submitted to the Aqueduct Commissioners by the Chief Engineer for the construction of a dam near the mouth of the Croton river, dated October 8, 1890, and as modified and adopted by the Aqueduct Commissioners on October 7, 1891.

The same were adopted by the following vote :

Affirmative– Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also presented the following communication received from the Chief Engineer :

NEW YORK, October 7, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—The accompanying communication received from Messrs. David R. Paige & Co., contractors, asking for an advance of $5,000 on the percentage retained for work done under their contract for the Bog Brook Dams, has been referred to me by the President of the Aqueduct Commissioners.

You are well aware of the efforts of your Engineer to press this work ; the importance of the completion of the dams to water-line is second only to that of completing Sodom Dam last spring. This statement is in my opinion the strongest recommendation that I can make to you to grant the request of Messrs. David R. Paige & Co., if you can do so consistently.

The amount now retained on this work is $26,158.57, and considering the work remaining to be done, I do not see that the interests of the city can suffer from the action herein recommended.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution :

Resolved, That the Aqueduct Commission hereby requests and advises the Comptroller to release and pay to David R. Paige & Company, contractors for the construction of the Bog Brook Dams, out of the ten per cent. retained for work done under the contract for the construction of said dams, the sum of five thousand dollars, the said sum to be used in hurrying the completion of the work called for under said contract.

The same was adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Comptroller, under date of September 30, 1891, gave notice of the issue of warrants for the payment of a voucher not certified to by the Aqueduct Commissioners for Westchester County Section, $7,922, leaving a balance to the credit of Additional Water Fund of $96,630.03.

Which was ordered entered upon the books of the Commission and filed.

On motion of Commissioner Scott, the minutes of special meeting of September 21, and stated meetings of September 23 and 30, 1891, were ordered approved.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, October 14, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

In the absence of the Secretary, Auditor J.C. Lulley was elected Secretary pro tem.

The Construction or Executive Committee presented the following communication:

LAW DEPARTMENT,
OFFICE OF THE COUNSEL TO THE CORPORATION.
NEW YORK, October 10, 1891.

James Corrigan
vs.
The Mayor.

Hon. FRANCIS M. SCOTT, *Aqueduct Commissioner:*

SIR—I enclose herewith, with my approval, a transcript of a judgment in the action entitled as above, for $1,614.

The claim was for salary as an Inspector of Masonry on the New Aqueduct, for the time that the plaintiff was suspended, amounting to $3,000.

In a letter dated October 8, 1891, the Comptroller informed me that the plaintiff's attorney had agreed to accept the sum of $1,500, with $114 for costs and disbursements, in full settlement, and considered that it was desirable that the claim should be adjusted on that basis.

A judgment was then entered upon an offer and acceptance. As this judgment is not to be paid out of the judgment fund, but out of moneys provided for the construction of the New Aqueduct and expenses connected therewith, I send the transcript to you, in accordance with the suggestion in your letter of October 7, 1891.

Very respectfully,
WM. H. CLARK, Counsel to the Corporation.

— and recommended the adoption of the following resolution:

Resolved, That a voucher be and the same is hereby ordered drawn in favor of James Corrigan, for the sum of one thousand six hundred and fourteen dollars, being for salary due said Corrigan while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, A communication has been received from the Counsel to the Corporation, transmitting with his approval a transcript of judgment in an action entitled Edward Fitzgerald vs. the Mayor, etc., for three hundred and fifty dollars, and stating that the same should be paid out of moneys provided for the construction of the New Aqueduct and expenses connected therewith ; therefore

Resolved, That a voucher be and the same is hereby ordered drawn in favor of Edward Fitzgerald, for the sum of three hundred and fifty dollars, being for salary due said Fitzgerald while employed as an Inspector of Masonry on the New Aqueduct, and cert fied to the Comptroller for payment.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, A communication has been received from the Counsel to the Corporation, transmitting with his approval a transcript of judgment in an action entitled Morton D. Cassidy vs. the Mayor, etc., for one hundred and fifty-nine dollars and fifty cents, and stating that the same should be paid out of moneys provided for the construction of the New Aqueduct and expenses connected therewith ; therefore

Resolved, That a voucher be and the same is hereby ordered drawn in favor of Morton D. Cassidy for the sum of one hundred and fifty-nine dollars and fifty cents, being for salary due said Cassidy while employed as a Rodman on the New Aqueduct, and certified to the Comptroller for payment.

On motion of Commissioner Tucker, the same was adopted.

The Committee also presented the following communication, received from the Chief Engineer, and recommended that the same be spread in full on the minutes and filed :

NEW YORK, October 12, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—Since October 6th, the date of my last report, the flow of water from Sodom Dam has been maintained at the rate of 30,000,000 gallons per twenty-four hours. The water is now 37.79 feet lower than it was when the gates were opened for the first time.

I am, very respectfully,

A. FTELEY, Chief Engineer.

On motion of Commissioner Tucker, the recommendation was approved.

The Committee also presented the resignation of Rodman I. H. Baxter, and recommended that the same be accepted, to take effect on the 24th instant.

On motion of Commissioner Tucker, the recommendation was approved.

The Committee also recommended the adoption of the following resolution :

Resolved, That the action of the Chief Engineer in detailing Superintendent of Dam Construction, John R. Soper, for duty at Titicus Dam on the 2d instant, be and hereby is approved.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, Transitman W. T. Ross is hereby certified to the Civil Service Commission for examination for promotion to the position of Assistant Engineer.

On motion of Commissioner Scott, the same was adopted.

The Committee also presented the following :

That they have been notified by Masten & Nichols, attorneys, of the assignment of Clinton Stephens as executor under the last will and testament of John Sullivan, deceased, Albert L. Rider and Patrick J. Dougherty, of $4,000 of the moneys due or to grow due under a certain contract, dated December 30, 1887, made with the Mayor, Aldermen and Commonalty of the City of New York for the construction of a dam and its appurtenances on the East Branch of the Croton river, in the town of South East, Putnam County, New York, to the American Cement Company of the State of New Jersey ; and inasmuch as the contract for doing said work provides that the contractors shall not assign, by power of attorney or otherwise, unless by and with the consent of the Aqueduct Commissoners, and your Committee being satisfied that it will be to the interests of the work and beneficial to the City of New York that said consent be given, we recommend the adoption of the following resolution :

Resolved, That the Aqueduct Commissioners hereby assent and consent to the assigning of the sum of four thousand dollars that may become due to Sullivan, Rider & Dougherty under and in pursuance of a certain contract, bearing date December 30, 1887, for the construction of a dam and its appurtenances on the East Branch of the Croton river, in the Town of South East, Putnam County, New York.

On motion of Commissioner Scott, the same was adopted.

On motion of Commissioner Scott, the action taken by the Commissioners on September 23, 1891, relating to the assignment of the sum of $4,000 of the moneys due or to grow due under a certain contract, bearing date December 30, 1887, for the construction of a dam and its appurtenances on the East Branch of the Croton river, in the town of South East, Putnam County, New York, from Sullivan, Rider & Dougherty, contractors, to the American Cement Company of New Jersey, was reconsidered and rescinded.

The Committee of Finance and Audit reported their examination and audit of Vouchers Nos. 7331 to 7339, inclusive, and 7349, being estimates for work done by contractors, amounting to $57,632.20 ; also of bills contained in Vouchers Nos. 7340 to 7347, inclusive, and 7350 to 7352, inclusive, amounting to $2,569.26.

On motion of Commissioner Cannon, the same were approved and ordered certified to the Comptroller for payment.

The Commissioners then adjourned.

J. C. LULLEY, Secretary pro tem.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, October 21, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

The Construction or Executive Committee presented the following:

The Construction or Executive Committee report:

That at a meeting of said Committee, held on October 20, 1891, the following resolution was adopted, and they now ask your approval of their said action:

Resolved, That the bid-box be closed, and the keys given to the President; and that the Secretary be authorized by this Commission to receive the bids for grading, improving and fencing the grounds at several of the shafts of the New Croton Aqueduct, as called for in the approved forms of contract and specifications on file in the office of the Aqueduct Commissioners; also to receive the checks of the bidders, and to make the necessary preparations for opening the bids received for doing said work under the law.

On motion of Commissioner Scott, the action of the Committee was approved.

In pursuance to the following notice, published daily for fifteen consecutive days, commencing with October 5, 1891, in the CITY RECORD, "New York World" and "Commercial Advertiser," bids were received for grading, improving and fencing the grounds at several of the shafts of the New Croton Aqueduct:

AQUEDUCT COMMISSIONERS' OFFICE,
ROOM 209, STEWART BUILDING, No. 280 BROADWAY,
NEW YORK, October 5, 1891.

To Contractors.

Bids or proposals for grading, improving and fencing the grounds at several of the shafts of the New Croton Aqueduct, as called for in the approved forms of contract and specifications on file in the office of the Aqueduct Commissioners, will be received at this office until 3 o'clock P. M. on Wednesday, October 21, 1891, at which place and hour they will be publicly opened by the Aqueduct Commissioners, and the award for doing said work will be made by said Commissioners as soon thereafter as possible.

Blank forms of contract and specifications for doing said work, and bids or proposals, and proper envelopes for their inclosure, can be obtained at the above office of the Aqueduct Commissioners on application to the Secretary.

By order of the Aqueduct Commissioners,

JAMES C. DUANE, President.

JOHN C. SHEEHAN, Secretary.

The following bids, upon which the required deposits had been made, were then opened and read aloud by the Secretary:

1. James Hart	$27,855 46
2. John Twiname	29,951 71
3. Levy & Quinn	23,457 27
4. McCormick & Carpenter	27,476 30
5. P. J. Moran & Co	28,322 93
6. John H. Brosnan	26,383 15

Whereupon, on motion of Commissioner Scott, the following preamble and resolution was adopted:

Whereas, Bids for grading, improving and fencing the grounds at several of the shafts of the New Croton Aqueduct having been received and publicly opened and read; therefore

Resolved, That the Chief Engineer is hereby directed to have said bids calculated and tabulated, and submit the same, together with his estimate of the work, at a meeting of the Construction or Executive Committee of the Aqueduct Commissioners, for consideration and canvassing by them at 3 o'clock P. M. on the 27th day of October, 1891; and the bids and checks of the bidders are hereby referred to the Committee of Finance and Audit for examination and report to the Commissioners as to their formality and the sufficiency of the sureties proposed by the bidders.

The Committee of Finance and Audit reported their examination and audit of bills contained in Vouchers Nos. 7354 to 7369, inclusive, amounting to $680.94; also of judgments obtained by former Inspectors of Masonry, amounting to $470.91.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following communication received from the Chief Engineer:

NEW YORK, October 20, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—I was waiting for the second installment of land to be taken near Carmel to ask you to authorize me to build temporarily a portion of road which will be necessarily flooded at moderately high water under our operations at the main dam. If this is not done the village of Carmel is going to be cut off from the western part of the county. As it is time that we should

commence operations, I have requested the owners of land in the immediate vicinity to allow us to borrow earth from their land. They demur, however, and I believe that permission could not be obtained for the taking of such material unless we pay for it. The cost of such permission would be below $200. Inasmuch as the very land from which the material is to be taken will be a part of the next taking, I respectfully submit to your Committee the question whether it would be advisable, in view of the future flooding of the ground, to buy the necessary material on the conditions above mentioned. I think that it should be done.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution :

Resolved, That authority is hereby given to do the work above referred to, at an expense not to exceed the sum of two hundred dollars, and an appropriation of said amount is hereby made to cover the cost thereof.

The same was adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also recommended the adoption of the following resolution :

Resolved, That upon the recommendation of the Chief Engineer, the accompanying bill of C. W. Palmer for putting in place stop-planks at the East Branch and Bog Brook Dams and Gate-house in connection with the Bog Brook Dam, amounting to $224.63, be and hereby is approved and ordered certified to the Comptroller for payment.

The same was adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also recommended the adoption of the following resolution :

Resolved, That the accompanying bill, being for taxes due School District No. 6, Town of North Salem, N. Y., amounting to $43.87, be and hereby is approved and ordered certified to the Comptroller for payment.

The same was adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also recommended the adoption of the following resolution :

Resolved, That upon the recommendation of the Chief Engineer, Rodman John P. R. Taaffe is hereby recommended to the Civil Service Commission for examination for promotion to the grade of Leveler.

On motion of Commissioner Cannon, the same was adopted.

The Committee also presented the following abstract of Trial Balance showing in detail the expenditures of the Aqueduct Commission from its inception to October 1, 1891, and recommended that the same be spread in full on the minutes and filed :

Abstract of Trial Balance to October 1, 1891.

Commissioners' Office.		
Salaries of Commissioners	$199,601 83	
Salaries of Secretary and Employees	108,980 83	
Stationery	3,199 19	
Furniture and fixtures	3,172 71	
Rent	31,606 50	
Incidental expenses	5,521 20	
Books maps and drawings	337 10	
Traveling expenses	1,397 98	
Advertising	19,145 99	
Stenographic reports	4,334 29	
		$377,298 62
Chief Engineer's Office.		
Salaries of Engineers, etc	$428,995 54	
Stationery	5,930 30	
Furniture and fixtures	4,268 54	
Rent	36,297 25	
Incidental expenses	6,736 69	
Books, maps and drawings	18,519 62	
Consulting Engineer's fees	100 00	
Drawing instruments, tables and materials	3,916 39	
Testing machines and tests	8,207 81	
		512,972 14
Tarrytown Office.		
Salaries of Engineers	$57,692 24	
Stationery	1,180 41	
Furniture and fixtures	750 25	
Rent	6,600 00	
Incidental expenses	4,030 36	
Books, maps and drawings	92 81	
Drawing instruments, tables and materials	1,127 78	
Laborers on the line	2,703 17	
Drivers and Laborers	19,989 03	
Field instruments and implements	8,776 99	
Traveling expenses	4,069 63	
Harness and stable fittings	2,046 20	
Maintenance, horses and wagons	11,022 82	
Horses	3,573 00	

Wagons	$1,118 00	
Hire of horses and wagons	1,290 75	
		$126,463 44
Division Engineers.		
Salaries of Engineers and Laborers—Old Aqueduct	$154,834 84	
Salaries of Engineers and Laborers—New Aqueduct	1,290,583 55	
Stationery	5,818 06	
Furniture and fixtures	4,525 13	
Rent	22,682 33	
Incidental expenses	10,902 78	
Books, maps and drawings	51 99	
Drawing instruments, tables and materials	2,826 33	
Field instruments and implements	17,613 13	
Traveling expenses	6,239 79	
Harness and stable fittings	1,492 32	
Maintenance, horses and wagons	12,384 26	
Horses	1,925 00	
Wagons	1,801 00	
Hire of horses and wagons	680 50	
Heating headquarters	8,036 08	
Testing machines and tests	2,863 80	
Laborers on the line	15 75	
Auxiliary offices	3,107 27	
		1,548,413 91
Croton Lake Survey.		
Salaries, Engineers and Laborers	$39,620 04	
Rent	24 00	
Incidental expenses	74 89	
Drawing instruments, tables and materials	1 00	
Field instruments and implements	583 16	
Traveling expenses	340 92	
Harness and stable fittings	45	
Maintenance, horses and wagons	51 60	
Hire of horses and wagons	130 25	
		40,826 31
New Reservoir Survey.		
Salaries, Engineers and Laborers	$9,588 00	
Stationery	3 91	
Furniture and fixtures	6 38	
Incidental expenses	52 06	

Drawing instruments, tables and materials	$25 68	
Field instruments and implements	434 31	
Traveling expenses	8 54	
		$10,118 88
Sodom Dam Survey.		
Salaries, Engineers and Laborers	$7,072 68	
Stationery	1 50	
Incidental expenses	44 98	
Field instruments and implements	86 49	
Traveling expenses	47 10	
Maintenance, horses and wagons	2 00	
Hire of horses and wagons	50 75	
		7,305 50
Surveying Dam Sites.		
Salaries, Engineers and Laborers	$25,447 70	
Stationery	26 35	
Furniture and fixtures	37 50	
Incidental expenses	706 69	
Drawing instruments, tables and materials	7 80	
Field instruments and implements	88 00	
Traveling expenses	573 54	
Maintenance, horses and wagons	653 95	
Hire of horses and wagons	102 00	
Heating headquarters	6 93	
Rents	625 33	
Books, maps and drawings	8 00	
		28,283 84
Principal Assistant Engineer, New York Office.		
Stationery	$59 06	
Furniture and fixtures	36 24	
Incidental expenses	53 36	
Heating headquarters	9 25	
		157 91
Aqueduct Commissioners' Report, 1883-1887	$8,901 51	
Reports of Engineers and Aqueduct Commissioners on Quaker Bridge Dam	1,473 16	
Reports of Engineers of High Masonry Dam	490 75	
Engraving and printing	24,163 58	
Construction damages	200 00	
Claims for damages	2,438 50	
Land Agents	1,168 65	
Taxes on land	7,847 55	

Diamond rock boring drills	$135,518 08	
Diamond rock borings	7,077 42	
Monumenting the line	3,704 98	
Monumenting Sodom Dam Survey	1,546 72	
Monumenting Aqueduct Tunnel, Division Engineer	143 72	
Models	1,355 43	
Observatory towers	1,805 95	
Judgments	507 54	
Land and land damages	57,869 82	
Examination of ventilation and lighting	1,305 36	
Examining Engineers	11,041 82	
Board of Experts, etc., Quaker Bridge Dam	12,550 00	
Experts examining construction work	11,926 15	
Experts on water-gates and other machinery	210 00	
Inspection of cast-iron pipes, etc	8,286 40	
East Branch Reservoir—Incidental expenses	165 00	
		$301,699 10
		$2,953,539 65

Contracts.

SECTION.	ESTIMATE.		
1	Final.	Smith & Brown	$649,964 62
2	"	Brown, Howard & Co	2,490,829 35
3	"	"	1,836,215 59
4	"	"	1,805,244 83
5	"	"	810,066 15
6	"	O'Brien & Clark	748,852 97
7	"	"	1,777,610 99
8	"	"	1,454,157 36
9	"	"	1,921,087 67
B	"	Heman Clark	1,513,279 76
A	"	"	1,105,778 60
12	"	Chas. Peterson, assignee of O'Brien & Clark	541,923 04
13	"	John Brunton & Co	427,641 42
14	"	"	617,869 75
15	"	Richard A. Malone	156,358 20
15½	"	Robert Hanna & Co	27,416 82
16	"	O'Brien & Clark	962,559 51

17	Final.	Richard J. Malone	$37,621 69	
East Branch Reservoir Dam	43...	Sullivan, Rider & Dougherty	361,498 92	
Dams 1 and 2	30...	David R. Paige & Co.	225,266 08	
Deepening and finishing Shaft No. 24	Final.	O'Brien & Clark	91,904 59	
Iron-lined masonry Aqueduct	"	Breuchaud, Pennell & Co.	69,369 20	
Stop-cock valves	"	Coldwell, Wilcox & Co.	19,649 53	
Gate-house at Pocantico	"	John Peirce	21,717 92	
Shaft 13A	"	O'Brien & Clark	22,963 40	
Shaft 13½	"	"	18,093 69	
Shaft 15½	"	John A. Lee	15 412 90	
One Hundred and Thirty-fifth Street Gate-house, doors, windows, etc	"	Charles W. Palmer	6,935 00	
Cast-iron work, wrought-iron work, New Croton Gate-house	"	Coldwell, Wilcox & Co	16,057 02	
Highways, etc., East Branch, etc	"	Clinton Stephens	50,851 69	
Gate-house superstructure walls for Blow-off Chambers, at Ardsley	"	O'Brien & Clark	4,900 00	
Cutting timber, clearing ground, East Branch Reservoir	"	Pennell & O'Hern	8,975 co	
22.2' x 5' sluice gates, etc., Sections 15 and 17	"	John Fox	14,190 00	
3' x 4' sluice gates, Pocantico, Ardsley and South Yonkers Gate-houses	"	"	6,750 00	
3' x 6' sluice gates	"	"	21,900 00	
Earth and masonry dam, Reservoir M	18	Washburn, Shaler & Washburn	1,6,3?2 02	
Earth and masonry dam, Reservoir D	10	Michael S. Coleman	20,358 21	
Earth and masonry dam, Auxiliary Reservoir D	10	"	13,067 41	
Gate-house at South Yonkers	Final.	O'Brien & Clark	20 349 79	
Gate-house for the new gate chambers at Croton Dam	15	Smith, Brown & Coleman	21,323 70	
Combined stationary hoisting engines, etc., for Shaft 25	Final.	Charles Peterson	11,?50 00	
2 pairs horizontal tubular boilers, etc	"	West Point Manufacturing Co	11,900 00	
11 head horses, etc, for the shafts	8	Breuchaud, Pennell & Co.	26,812 42	
Blow-off Shaft 24	3	John M. Waddle	759 70	
2 complete portable hoisting plants	Final.	West Point Manfacturing Co (Limited)	7,8co 00	
Highway retaining-wall appurtenances, etc., Croton Dam	1	Augustine M. Newton	465 81	$20,211,3c2 72

Agreements.

SECTION.	ESTIMATE.		
Shaft 11C	Final.	Brown, Howard & Co.	$5,000 00
Shaft 12C	"	O'Brien & Clark	5,020 00
Shaft 16½	"	"	5,000 00
Shaft 18½	"	"	5,000 00
Shaft 19½	"	Heman Clark	5,000 00

Culvert, Shaft 19	Final.	O'Brien & Clark	$4,893 74	
" 20	"	Heman Clark	2,932 05	
" 23	"	O'Brien & Clark	3,208 86	
Crib dock	"	Charles Peterson	3,694 60	
Iron work, Saw Mill river blow-off	"	Coldwell, Wilcox & Co.	1,962 57	
Pocantico blow-off	"	"	144 11	
Tibbett's Brook, etc.	"	"	144 11	
Lining Shafts 22 to 24, Section A	"	"	4,450 75	
" Shaft 20, Section B	"	"	2,663 28	
" Shaft 28, Section 13	"	"	2,315 02	
" Shaft 29, Section 14	"	"	2,358 57	
Cast and wrought iron ladders, Sections 1 to 9 and B and A	"	"	2,824 25	
Roof, iron floor plates	"	"	3,326 70	
Cast-iron special pipe	"	"	4,931 19	
Filling the low ground, Shaft Site No. 12	"	O'Brien & Clark	4,910 00	
Cave-in, Shaft 13	"	"	5,000 00	
Laying 20-inch pipe, Shaft 24	"	"	2,895 83	
Grouting Shaft 17½	"	"	4,427 50	
" Stations 778 and 779	"	"	1,075 00	
" Section 13	"	Rodgers, Shanly & Co	5,000 00	
" Shaft 30	"	Breuchaud, Pennell & Co.	2,900 93	
Highways, trestle-work and bridges	"	Smith & Brown	4,500 00	
Sodding South Yonkers embankment	"	Rider & Dougherty	1,575 57	
Taking down and enlarging top of Shaft 11C	"	C. L. Kalmbach	2,917 32	
Walls, foundations, etc., near blow-off chamber, Shaft 24	"	Charles Peterson	2,233 12	
Frame head-house and enlarging room, Shaft 25	"	"	3,690 00	
Frame boiler-house and coal bin, Shaft 25	"	"	3,635 00	
Shaft 17½	"	Thomas O'Hern	2,222 12	
9-inch anti-friction pump and improved turbine wheel, etc., Croton Dam Gate-house, Section 1	"	Joseph Edwards & Co	2,135 00	
6.2'x5' sluice-gates at Bog Brook, etc.	1	John Fox	2,520 00	
Pivot gate, Bog Brook Dams 1 and 2	1	Coldwell, Wilcox & Co.	2,445 00	
Finishing Shaft 21	"	William H. Baker	1,660 81	
				$120,593 00

Baling, pumping, etc., Section A	$1,309 50
Pumping water in iron pipes, Section 12	6,063 65
" " Section 13	5,405 00
" " Section 14	7,935 00
Iron pipe laid in tunnel, Section A	4,615 76
Iron pipe laid in tunnel, Section B	980 50

48-inch pipes at Shaft 11B	$327 50	
48-inch stop-cock valves	4,500 00	
Iron work, etc., at shafts	16,821 44	
Iron work, etc., for gate-houses and blow-offs	14,854 82	
Iron work, etc., for dams	2,773 74	
Iron bridge on the East Branch of the Croton river	2,145 00	
Timber work, etc., at shafts and gate-houses	18.992 89	
Exploration under the Harlem river	4.384 26	
Experimental section in concrete Shaft 18	185 25	
Extra work, etc., on Section 1	4,616 03	
" " 6	42 70	
" " 12	171 35	
" " 14	597 49	
" " 15	89 32	
" " 16	668 98	
" enlarging Shaft 11C	147 81	
" on the Pocantico Gate-house	287 44	
Additional work, Section 9	49 37	
" " 12	65 73	
" " A	1,609 56	
" East Branch Reservoir Dam	1,353 78	
" Earth and Masonry Dam, Reservoir M	1,339 53	
" Dams Nos. 1 and 2	60 00	
" highways or roads at East Branch	2,570 97	
Removing solid rock, etc	701 03	
Grading, etc., trenches, Quaker Bridge Dam site	150 00	
Surveys and topographical map on Croton watershed	7,000 00	
Soundings south of One Hundred and Thirty-fifth street	931 18	
Sinking test pits, Titicus river and Reservoir D Dam sites	540 35	
Hoisting engines for shafts	1,000 00	
Coating interior Aqueduct with cement	8,384 37	
Telephone line	4,995 62	
Preparing, pumping, etc., inverted siphon	2,643 91	
Preparing Aqueduct for permanent use	211 66	
Commissioners of Appraisal.		
Awards, Twenty-fourth Ward	$163,090 47	
" Manhattan Island Section	802,230 93	
" Westchester County	247,687 65	
" Putnam County Section	410,063 15	
		$1,623,072 20

City and County of New York	$98,519 82	
Westchester County	174,709 56	
Manhattan Island Section	77,100 50	
Putnam County Section	113,027 54	
		$463,357 42
Total expenditures		$25,503,387 48
Cr.		
Additional Water Stock	$24,645,000 00	
Premium Account	607,168 70	
Additional Water Fund—"Miscellaneous"	7,459 75	
Total receipts		25,259,628 45
Balance, Comptroller's Account vs. Aqueduct Commissioners		$243,759 03

Statement of Receipts and Expenditures of the Aqueduct Commissioners to October 1, 1891.

RECEIPTS.			
From Bonds Issued—			
Amount of bonds	$24,625,000 00		
Premium on same	607,168 70		
		$25,252,168 70	
From proceeds of miscellaneous sales, etc		7,459 75	
Total receipts			$25,259,628 45
EXPENDITURES.			
Vouchers, pay-rolls, etc	$2,895,669 83		
Contracts, agreements, etc	20,463,418 21		
Land and land damages	57,869 84		
		$23,416,957 86	
Commissioners of Appraisal		2,086,429 62	
Total expenditures			$25,503,387 48
Balance, Comptroller's Account vs. Aqueduct Commissioners			$243,759 03

On motion of Commissioner Cannon, the recommendation was approved.

The Committee also recommended the adoption of the following preamble and resolution:

Whereas, A communication has been received from the Counsel to the Corporation transmitting, with his approval, a transcript of judgment in an action entitled John W. Franklin vs. The Mayor,

etc., for the sum of $355.91, and stating that the same should be paid out of moneys provided for the construction of the New Aqueduct and expenses connected therewith ; therefore

Resolved, That a voucher be and the same is hereby ordered drawn in favor of John W. Franklin for the sum of $355.91, being for salary due said Franklin while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, A communication has been received from the Counsel to the Corporation transmitting, with his approval, a transcript of judgment in an action entitled John C. Schoonover vs. The Mayor, etc., for the sum of $115, and stating that the same should be paid out of moneys provided for the construction of the New Aqueduct and expenses connected therewith ; therefore

Resolved, That a voucher be and the same is hereby ordered drawn in favor of John C. Schoonover for the sum of $115, being for salary due said Schoonover while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

On motion of Commissioner Scott, the same was adopted.

The Secretary presented the following :

CITY OF NEW YORK—FINANCE DEPARTMENT,
COMPTROLLER'S OFFICE,
October 15, 1891.

JOHN C. SHEEHAN, Esq., *Secretary, etc.:*

SIR—Please have entered on the books in your office the following to credit of Additional Water Fund, viz. :

Warrant No. 1268 of 1890 canceled	$2,130 91
Rebate of interest on sundry awards	35 81
Rent of farm, Sodom Dam (Parcel 37)	300 00
Total	$2,466 72

Respectfully,

I. S. BARRETT, General Bookkeeper.

Which was ordered entered on the books of the Commission and filed.

On motion of Commissioner Scott, the minutes of stated meeting of October 7, 1891, were ordered approved.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 200 Stewart Building, on Wednesday, October 28, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

In the absence of the Secretary, Auditor J. C. Lulley acted as Secretary pro tem.

The Committee of Finance and Audit reported their examination and audit of bills contained in Vouchers Nos. 7373 to 7381, inclusive, amounting to $1,005,17.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee recommended the adoption of the following preamble and resolution :

Whereas, Application has been made by William H. Baker, contractor, for an extension of time to July 1, 1892, for the completion of the contract for building the head-house and engine-room superstructure at Shaft No. 25, on Section 12 of the New Aqueduct ; and the Chief Engineer having recommended that said extension of time be granted ; therefore

Resolved, That the Aqueduct Commissioners hereby grant to William H. Baker, contractor, an extension of time to July 1, 1892, in which to complete the contract above referred to, providing his bondsmen shall, within ten days from the date hereof, enter into a stipulation continuing their obligations for and during the completion of said contract under said extension of time, which is hereby allowed to him as further time for the performance of said contract ; and further providing that said Baker will enter into an agreement authorizing the Aqueduct Commissioners to deduct from any moneys that may become due on said contract the amount of direct damages provable by reason of said extension of time.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That the Chief Engineer and Special Assistant Engineer F. W. Frost be and hereby are designated to act on the Civil Service Examining Board in place of George S. Rice, late Deputy Chief Engineer, resigned.

On motion of Commissioner Scott, the same was adopted.

In connection therewith, the Committee presented the following communication, and recommended that the same be signed by the President, and transmitted to his Honor, the Mayor :

NEW YORK, October 28, 1891.

Hon. HUGH J. GRANT, *Mayor :*

SIR—On January 9, 1889, the following resolution was adopted by the Aqueduct Commissioners :

" Resolved, That upon the recommendation of the Chief Engineer, Mr. George S. Rice, Deputy Chief Engineer, is hereby designated to act as one of the Civil Service Examining Board, in place of Mr. Charles Pugsley, late Principal Assistant Engineer ; and Mr. Isaac Morley, Assistant Engineer, is hereby designated to act upon the same Board, in place of Mr. B. S. Church, Consulting Engineer, during the latter's absence."

And under date of February 9, 1889, you approved of said action in the following terms :

" In pursuance of Regulation No. 67 of the Rules and Regulations of the Municipal Civil Service Board of the City of New York, and in accordance with a resolution passed at a stated meeting of the Board of Aqueduct Commissioners, held on Wednesday, January 9, 1889, in the words following, to wit :

" Resolved, That upon the recommendation of the Chief Engineer, George S. Rice, Deputy Chief Engineer, is hereby designated to act as one of the Civil Service Examining Board, in place of Charles Pugsley, late Principal Assistant Engineer, and Mr. Isaac Morley, Assistant Engineer, is hereby designated to act on the same Board, in place of Mr. B. S. Church, Consulting Engineer, during the latter's absence."

" I hereby approve the designation of George S. Rice to act as one of the Civil Service Examining Board, in the place of Charles Pugsley, late Principal Assistant Engineer ; and I hereby further approve the designation of Mr. Isaac Morley to act on the same Board, in the place of Mr. B. S. Church, Consulting Engineer, during the absence of the latter.

" HUGH J. GRANT, Mayor."

On August 1, 1889, the office of Consulting Engineer of the Aqueduct Commission was abolished. On December 18, 1889, Assistant Engineer Isaac Morley resigned, and on July 15, 1891, the resignation of Deputy Chief Engineer George S. Rice was accepted, which leaves the Aqueduct Commissioners without a representative on the Municipal Civil Service Examining Board.

The Aqueduct Commissioners, by resolution adopted this day, have designated Chief Engineer A. Fteley and Assistant Engineer F. W. Frost to act on the Civil Service Examining Board, in place of Deputy Chief Engineer George S. Rice, resigned ; and they now ask your approval of such action.

A number of the members of the Engineer Corps have been recommended to the Civil Service Board for examination for promotion, but owing to the fact that the Commissioners have no

representative on the Civil Service Examining Board no examination has as yet taken place; and we respectfully request that you will signify your approval of said action at your earliest convenience.

Respectfully yours,

J. C. DUANE, President.

On motion of Commissioner Scott, the recommendation was approved.

The Commissioners then adjourned.

J. C. LULLEY, Secretary pro tem.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, November 4, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

The Committee of Finance and Audit reported their examination and audit of bills contained in Vouchers Nos. 7391 to 7402, inclusive, amounting to $3,222,56.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

On motion of Commissioner Tucker, the minutes of stated meetings of October 14, 21 and 28, 1891, were ordered approved.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, November 11, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

In the absence of the Secretary, Auditor J. C. Lulley acted as Secretary pro tem.

The Committee of Finance and Audit reported their examination and audit of Vouchers Nos. 7404 to 7413, inclusive, being estimates for work done by contractors, amounting to $54,122.08; also of bills contained in Vouchers Nos. 7414 to 7423, inclusive, amounting to $652.24.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following:

The Construction or Executive Committee report:

That they have examined into the matter of the claim of Richard Matthews to be allowed pay as an Inspector of Masonry on the New Aqueduct for three days in April, 1889, during which time he was under suspension; and being of opinion that said claim is unjust and should not be paid, they recommend the adoption of the following resolution:

Resolved, That the claim of Richard Matthews, above referred to, be and hereby is denied.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following resolution:

Resolved, That the accompanying bills for taxes for School District No. 6 of the Town of Mount Pleasant, N. Y., amounting to five dollars and thirty-seven cents, are hereby approved and ordered certified to the Comptroller for payment.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, the Purveyor be and hereby is authorized to sell, at public auction after proper advertisement, the gray mare now in the custody of Division Engineer McCulloh.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, an appropriation of two hundred and twenty-five dollars is hereby made for the purpose of purchasing a horse to take the place of the one authorized to be sold at public auction.

The same was adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, Application has been made by Smith, Brown & Coleman, contractors, for an extension of time to December 31, 1891, in which to complete their contract for building the gate-house superstructure, etc., for the new gate chambers at Croton Dam, on Section No. 1 of the New Croton Aqueduct ; and the Chief Engineer having recommended that said extension of time be granted ; therefore

Resolved, That the Aqueduct Commissioners hereby grant to Smith, Brown & Coleman, contractors, an extension of time to December 31, 1891, in which to complete the contract above referred to, providing their bondsmen shall, within ten days from the date hereof, enter into a stipulation continuing their obligations for and during the completion of said contract under said extension of time, which is hereby allowed to them as further time for the performance of said contract.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, the contract for grading, improving and fencing the grounds at several of the shafts of the New Croton Aqueduct be and hereby is awarded to Levy & Quinn at their bid of twenty-three thousand four hundred and fifty-seven dollars and twenty-seven cents, it being the lowest bid received for doing said work and less than the estimate of the Chief Engineer.

On motion of Commissioner Scott, the same was adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Deputy Comptroller, under date of October 31, 1891, gave notice of the issue of warrants for the payment of vouchers not certified to by the Aqueduct Commissioners, for

Westchester County Section	$350 12
Reservoir "M"	5,520 00
Sodom Dam and Reservoir	607 68

—leaving a balance to the credit of "Additional Water Fund" of $52,563.18.

And, under date of October 23, 1891, giving notice that bonds have been issued and placed to the credit of "Additional Water Fund," amounting to $50,000.

Which were ordered entered upon the books of the Commission and filed.

The Commissioners then adjourned.

J. C. LULLEY, Secretary pro tem.

AQUEDUCT COMMISSION.

Minutes of Special Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Friday, November 13, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

The Construction or Executive Committee recommended the adoption of the following preambles and resolutions:

Whereas, On October 7, 1891, the Aqueduct Commissioners requested the Commissioner of Public Works to prepare and submit to the Aqueduct Commissioners a modification of the plans heretofore submitted for the building of a high masonry dam near the mouth of the Croton river, submitted by the Commissioner of Public Works on January 30, 1884, and shown on Exhibits "F," "G," "H," "I," and "K," the said modification to be in accordance with the plans submitted to the Aqueduct Commissioners by the Chief Engineer for the construction of a dam near the mouth of the Croton river, dated October 8, 1890, and as modified and adopted by the Aqueduct Commissioners on October 7, 1891; and

Whereas, On November 11, 1891, the Commissioner of Public Works submitted final plan sheets for the building of said high masonry dam, in accordance with the recommendation of the Aqueduct Commissioners; therefore

Resolved, That for the more efficient carrying out of the provisions of chapter 490 of the Laws of 1883, we, the Aqueduct Commissioners, appointed to carry out the provisions of said chapter of said law, and the acts amendatory thereof, do hereby approve and adopt the plans submitted to us by the Commissioner of Public Works, on the 11th day of November, 1891, for the acquirement in fee of lands for the construction of a high masonry dam, to be known as "Cornell Dam," in the Towns of Courtlandt and Yorktown, Westchester County, New York, subject to such changes or modifications as said Aqueduct Commissioners may from time to time deem necessary for the more efficient carrying out of the provisions of said act, and we hereby direct that said plans be filed and designated "Final Plan Sheet No. 5, of 1891."

Resolved, That the plans so adopted be filed in the office of the Aqueduct Commissioners, and a copy of the same and each of them, with a certificate of such adoption written thereon and signed

by the Aqueduct Commissioners, be transmitted to the Commissioner of Public Works for filing in his office.

The same were adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also presented six similar property maps, received from the Commissioner of Public Works on the 11th day of November, 1891, showing lands required for the construction of a high masonry dam near the mouth of the Croton river, in the towns of Courtlandt and York town, Westchester County, New York, and recommended the adoption of the following resolution :

Resolved, That the six similar property maps, submitted by the Commissioner of Public Works on the 11th day of November, 1891, showing parcels of land required for the construction of a high masonry dam near the mouth of the Croton river, in Westchester County, New York, to be known as "Cornell Dam," be and the same are hereby approved and adopted, and directed to be certified and transmitted to the Counsel to the Corporation for filing and delivery to the Commissioners of Appraisal, in accordance with the provisions of chapter 490 of the Laws of 1883, and the acts amendatory thereof; and the Counsel to the Corporation is hereby requested to take the steps necessary to acquire for the City, under chapter 490 of the Laws of 1883, the fee in the lands described on said maps; and the Secretary is hereby directed to furnish to the Counsel to the Corporation all maps, plans, etc., which may be required in the premises.

The same was adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, November 18, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

The Committee of Finance and Audit reported their examination and audit of bills contained in Vouchers Nos. 7424 to 7440, inclusive, amounting to $1,817.11 ; also of Vouchers Nos. 7441 to 7443, inclusive, being amount of judgments rendered in favor of certain Inspectors of Masonry for salary due them, amounting to $1,569.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee recommended the adoption of the following resolution :

Resolved, That the action of the Chief Engineer in temporarily employing James E. Kearns, as a Laborer at two dollars per day, to assist in painting iron-work at Sodom Dam, etc., in place of Daniel Manning, deceased, his employment to commence on the 18th instant, be and hereby is approved.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That upon the recommendation of the Chief Engineer, an additional leave of absence, without pay, is hereby granted to Assistant Engineer B. R. Value, until February 16, 1892, and until he shall be assigned to duty by the Chief Engineer.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That the accompanying bill for school taxes due District No. 12, of the Town of South East, New York, for 1891, amounting to seventeen dollars and seventy-one cents, is hereby approved and ordered certified to the Comptroller for payment.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That the accompanying bill for school taxes due District No. 6, of the Town of Carmel, New York, amounting to thirty-three dollars and seventy-nine cents, is hereby approved and ordered certified to the Comptroller for payment.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That the action of the Chief Engineer in renting Room No. 1, in the People's Savings Bank, at Yonkers, New York, for a safe room, at a rental of nine dollars per month, from June 1, 1891, be and hereby is approved.

On motion of Commissioner Scott, the same was adopted.

The Committee also presented forms of contract, specifications and bond, received from the Commissioner of Public Works on October 31, 1891, to provide for building two brick engine-houses for the portable hoisting plants of the New Croton Aqueduct, and recommended the adoption of the following resolutions :

Resolved, That the forms of contract, specifications and bond received from the Commissioner of Public Works on October 31, 1891, and approved by the Counsel to the Corporation "as to form," for building two brick engine-houses for the portable hoisting plants of the New Croton Aqueduct, be and the same are hereby approved and adopted ; and the Secretary is hereby directed to have triplicate copies thereof prepared for certification by the Aqueduct Commissioners, and filed in accordance with section 25, chapter 490, Laws of 1883.

Resolved, That the President and Secretary be and they are hereby directed to advertise in the CITY RECORD, New York "World," and "Commercial Advertiser," a notice and advertisement inviting sealed bids or proposals for doing the work above referred to, as provided in the contract and specifications this day approved and adopted by the Aqueduct Commissioners.

The same were adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled John S. Berry vs. The Mayor, Aldermen and Commonalty of the City of New York for the sum of one hundred and thirty-six dollars ; therefore,

Resolved, That a voucher be and hereby is ordered drawn in favor of John S. Berry for the sum of one hundred and thirty-six dollars, being amount of judgment rendered in favor of said Berry for salary due him while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled Alexander Berley vs. The Mayor, Aldermen and Commonalty of the City of New York for the sum of $304 ; therefore,

Resolved, That a voucher be and hereby is ordered drawn in favor of Alexander Berley for the sum of three hundred and four dollars, being amount of judgment rendered in favor of said Berley for salary due him while employed as an Axeman on the New Aqueduct, and certified to the Comptroller for payment.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled James Quinn, Jr., vs. The Mayor, etc., for the sum of $1,129 ; therefore,

Resolved, That a voucher be and hereby is ordered drawn in favor of James Quinn, Jr., for the sum of one thousand one hundred and twenty-nine dollars, being amount of judgment rendered in favor of said Quinn for salary due him while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

On motion of Commissioner Tucker, the same was adopted.

The Committee also presented the following communication, received from the Chief Engineer :

NEW YORK, November 18, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—As the Commissioners for the construction of the Washington Bridge are improving and finishing a park near Shaft 24, it is proper that the grounds around the said shaft be treated in a similar manner.

One of the improvements consists in a fence which is now being built all around the bridge park. It is obvious that the fence around the grounds adjoining Shaft 24 should be the same as that now being built by the Bridge Commission.

I saw their Secretary, Mr. Niven, who told me that they had advertised for the work and received one bid only, to the amount of $1.54 per lineal foot complete. This bid was approved by their engineer ; also by Major McLean, the engineering adviser of the Comptroller, and the contract has been executed on those terms.

The contractor, Mr. F. V. Smith, offers to do our work on the same specifications, and on the same terms, at any time that the Aqueduct Commissioners should direct.

As the price of $1.54 per lineal foot under which the work is to be done for the Bridge Commissioners is not unreasonable, I recommend that the contract for fencing around the grounds of Shaft 24 be given to Mr. F. V. Smith on the same terms and under the same specifications (except as herein otherwise specified), provided Mr. Smith builds without any additional charge a double swinging gate opposite the gate-house at Shaft 24 ; provided also, he erects the fence at such a time as shall be ordered by the Aqueduct Commissioners.

I inclose herewith a letter received from Mr. Niven, Secretary of the Harlem River Bridge Commission.

The fencing required is 626 lineal feet, which at $1.54 per lineal foot, makes a total of $964.04.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, the contract for fencing the grounds around Shaft No. 24 of the New Aqueduct, is hereby awarded to F. V. Smith at his bid of one dollar and fifty-four cents per lineal foot, amounting in all to nine hundred and sixty-four dollars and four cents, provided said Smith agrees to comply with the requirements of the Chief Engineer as above stated; and an appropriation of said amount is hereby made to cover the cost of doing said work.

The same was adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott, and Cannon—4.

The Committee also recommended the adoption of the following resolution :

Resolved, That authority is hereby given to the Chief Engineer to hire at Sing Sing, N. Y., for the coming winter months, a stable for the gray team used by Division Engineer Gowen, at a rental of not exceeding five dollars per month.

On motion of Commissioner Scott, the same was adopted.

On motion of Commissioner Scott, the minutes of stated meeting of November 4, 1891, were ordered approved.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, November 25, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

The Committee of Finance and Audit reported their examination and audit of bills contained in Vouchers Nos. 7446 to 7456, inclusive, amounting to $390.45; also of Vouchers Nos. 7460 to 7462, inclusive, being judgments rendered in favor of certain Inspectors of Masonry for salary due them, amounting to $1,184.71.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee presented the following communication received from the Chief Engineer:

NEW YORK, November 24, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—The accompanying communication of Messrs. Sullivan, Rider & Dougherty has been referred to me by President Duane.

I have followed the course of negotiations of these contractors with the proprietors of quarries who were furnishing stone to them, and I believe that their statements are true.

You know that last winter this firm has been working under great difficulties in order to carry up Sodom Dam to such a point as to enable you to fill the reservoir.

Although, to your knowledge, they are behind with their work, and have not been working very actively during the past season, and inasmuch as their past difficulties, well known to you, have been satisfactorily adjusted, I believe it to be to the interests of the city to give these contractors reasonable guarantee that their work will not be taken from them on March 1, 1892, if it is not at that time entirely finished.

This is to recommend that their application for a further extension to June 1, 1892, be granted, if otherwise consistent with your understanding of the subject.

You know that in the present condition of the dam the masonry is sufficiently advanced to enable you to fill the reservoir up to its full capacity.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended that the preamble and resolution adopted by the Aqueduct Commissioners on October 7, 1891, granting an extension of time to Sullivan, Rider & Dougherty, contractors, to March 1, 1892, in which to complete their contract for constructing a dam and other work on the East Branch of the Croton river, in Putnam County, New York, be reconsidered, and in lieu thereof recommended the adoption of the following preamble and resolution :

Whereas, Application has been made by Sullivan, Rider & Dougherty, contractors, for an extension of time for the completion of their contract for constructing a dam and other work on the East Branch of the Croton river, in Putnam County, New York, and the Chief Engineer having recommended that such extension of time be granted ; therefore,

Resolved, That the Aqueduct Commissioners hereby grant to Sullivan, Rider & Dougherty, contractors, an extension of time to June 1, 1892, in which to complete their contract above referred to, providing their bondsmen shall, within ten days from the date hereof, enter into stipulations continuing their obligations for and during the completion of said contract under said extension of time which is hereby allowed to them as further time for the performance of said contract ; and provided also that said contractors will take, at their own expense, all precautions for doing the work in cold weather, as may be ordered by the Engineer, and that they will waive all claims for damages whatsoever on account of any raising or lowering of the water in the reservoir that the Commissioners or their Engineer may order, or from such injury or damage as may be caused by the action of the elements ; and provided also that, if any damage is done to their work by such cause, they will waive all claim for compensation on account of damage, loss of time, or on account of other losses which they may incur from the rising of said water ; and provided also, that they will take, at their own expense, such precautions for protecting the gates at said dam, by boxing or otherwise, as may be ordered by the Engineer.

The recommendation was approved and the preamble and resolution adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also presented the following communication, received from the Chief Engineer :

NEW YORK, November 24, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—On July 6, 1891, I reported to your Committee recommending that an extension of time be granted to Messrs. David R. Paige & Co. on certain conditions, and you grant such extension.

Subsequently the conditions just mentioned not having been fulfilled, I asked you to reconsider your action in the premises, which you did on July 22.

I have to report that subsequently to your reconsideration the contractors increased their force to such an extent as to warrant the statement that the conditions mentioned in your resolution of July 8, 1891, have been so far complied with that I now believe that the amount of work therein stated will be finished on January 1 and February 1, 1892, respectively, thus enabling you to fill Bog Brook Reservoir next Spring. Such being the case, I would suggest that you take the resolution from the table and confirm to David R. Paige & Co. the allowance of time originally made to them by the Aqueduct Commissioners on July 8, 1891. I would recommend, however, that in the resolution passed by the Aqueduct Commissioners on July 8, 1891, on sixth line from the end, the words "and behind the Bog Brook Dams," be inserted after the words "on the East Branch of

Croton river," and that on the fourth line from the end, the word "dams" be substituted for the word "dam."

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended that the preamble and resolution referring to said matter, which was reconsidered and laid on the table on July 22, 1891, be taken from the table; and that in lieu thereof the following preamble and resolution be adopted:

Whereas, An application has been made by David R. Paige & Co., contractors, for an extension of time in which to complete their contract for building Dams Nos. 1 and 2 on Bog Brook, and adjacent tunnel in connection with the East Branch Reservoir; and the Chief Engineer having recommended that an extension of time be granted to said contractors on the conditions referred to in the foregoing communication; therefore

Resolved, That the Aqueduct Commissioners hereby grant to David R. Paige & Co., contractors, an extension of time in which to complete the contract above referred to, provided the bondsmen of said firm shall enter into a stipulation continuing their obligation for and during the completion of said contract under said extension of time, which is hereby allowed to them as further time for the performance of said contract; and also providing that said firm shall execute an agreement guaranteeing that the work will be so conducted that on or before January 1, 1892, the earth-work necessary for the proper filling of the reservoir shall be finished to Elevation 419, and that by February 1, 1892, the slope paving shall be finished to the same height, together with all the work which may be essential for the proper and safe filling of the reservoir, and the balance of the work to be entirely completed on or before July 1, 1892; the Aqueduct Commissioners reserving the right to cancel the extensions of time hereby granted whenever the Chief Engineer shall report in writing that the increased rate of progress, beginning with July 15, 1891, is not sufficient, in his opinion, to secure the completion of the work at the times herein mentioned; and furthermore providing that said contractors will take, at their own cost, such steps as will prevent any damage to their work due to the possible rising of the water behind the masonry dam on the East Branch of the Croton river and behind the Bog Brook Dams, caused by the orders of the Commissioners, if, in the opinion of said Commissioners, it is deemed necessary for the welfare and protection of the water supply of the City of New York to allow said water to rise behind said dams, or such injury or damage as may be caused by the action of the elements; and provided also that if any damage is done to their work by such cause, they will waive all claim for compensation on account of damage, loss of time, or on account of other losses which they may incur from the rising of said water.

The same was adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott, and Cannon—4.

The Committee also recommended the adoption of the following resolution:

Resolved, That upon the recommendation of the Chief Engineer, leave of absence without pay is hereby granted to Cæsar Leonhard, Draughtsman, from December 1, 1891, to February 1, 1892, and until he shall be assigned to duty by the Chief Engineer.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That upon the recommendation of the Chief Engineer, the accompanying bill of C. W. Palmer, being for labor done in making certain changes in the special manhole at South Yonkers, N. Y., amounting to seventy-eight dollars and fifty cents, is hereby approved and ordered certified to the Comptroller for payment.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That upon the recommendation of the Chief Engineer, the accompanying bill of P. J. Moran, being for work done in the removal of pipes in the vicinity of the One Hundred and Thirty-fifth Street Gate-house, amounting to twenty dollars and twenty-five cents, is hereby approved and ordered certified to the Comptroller for payment.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That upon the recommendation of the Chief Engineer, the accompanying bill of Mrs. L. M. Yale, being for four years' use of furnace in Division Engineer's office at Brewster, N. Y., amounting to $12, is hereby approved and ordered certified to the Comptroller for payment.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That upon the recommendation of the Secretary, Jefferson Groub and Hermann Blumenthal, employed as clerks in the Secretary's office, are hereby recommended to the Civil Service Commission for examination for promotion from the first to the second grade of clerkships under Class 1 of the Rules and Regulations of the Municipal Civil Service Boards.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Chief Engineer of this Commission has certified in writing, under date of November 25, 1891, that Breuchaud, Pennell & Co. have completely performed and carried out the provisions of the contract made by them with this Commission on the 16th day of October, 1890, for constructing eleven head-house superstructures for shafts of the New Croton Aqueduct, and has stated from actual measurements the whole amount of work done, and materials furnished under and according to the terms of said contract, and of the true value thereof; therefore

Resolved, That the Aqueduct Commissioners do accept the work done and materials furnished by Breuchaud, Pennell & Co., under the contract above referred to, and direct that a proper voucher for the final payment for work done and material furnished under said agreement be approved by the Aqueduct Commissioners and certified to the Comptroller for payment; and the Comptroller is

hereby requested to pay the amount of said final estimate, viz., four thousand six hundred and seventeen dollars and seventy-four cents, without any deduction for over-time.

The same was adopted by the following vote ;

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled James Hughes vs. The Mayor, Aldermen and Commonalty of the City of New York, for the sum of two hundred and one dollars ; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of James Hughes, for the sum of two hundred and one dollars, being amount of judgment rendered in favor of said Hughes for salary due him while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled John Mullen vs. The Mayor, Aldermen and Commonalty of the City of New York, for the sum of eight hundred and forty-three dollars ; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of said Mullen for the sum of nine hundred and ten dollars and fifty-eight cents, being amount of judgment rendered in favor of said Mullen, for salary due him while employed as an Inspector of Masonry on the New Aqueduct, and interest thereon from July 29, 1890, to November 30, 1891, and certified to the Comptroller for payment.

On motion of Commissioner Cannon, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled John Mullen vs. The Mayor, Aldermen and Commonalty of the City of New York, for the sum of sixty-nine dollars and forty-five cents ; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of said Mullen for the sum of seventy-three dollars and thirteen cents, being amount of judgment rendered in favor of said Mullen for costs in an action entitled John Mullen vs. The Mayor, Aldermen and Commonalty of the City of New York, and interest thereon from January 12, 1891, to November 30, 1891, and certified to the Comptroller for payment.

On motion of Commissioner Tucker, the same was adopted.

The Secretary gave notice of the filing of a lien by William H. Burke, Water Purveyor, against O'Brien & Clark, for materials furnished in the construction of Section 16 of the New Aqueduct, amounting to $589.68.

Which was ordered filed.

On motion of Commissioner Tucker, the minutes of meetings of November 11 and 13, 1891, were ordered approved.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, December 2, 1891, at 3 o'clock P. M.

Present—The Commissioner of Public Works, and Commissioners Duane, Tucker and Cannon.

The Construction or Executive Committee recommended the adoption of the following resolution :

Resolved, That the claim of Henry Scriver, herewith presented, for salary claimed to be due him while employed as an Inspector of Masonry on the New Aqueduct, be and hereby is denied.

On motion of Commissioner Cannon, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That the action of the Chief Engineer in temporarily employing the following-named persons as Laborers, at $2 per day, for work at the site of the Cornell Dam, on the dates hereinafter mentioned, be and hereby is approved :

William P. Gay, December 1, 1891.
R. Jones, November 27, 1891.
H. Jones, November 27, 1891.
W. Jones, November 27, 1891.
R. Owens, November 27, 1891.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, the accompanying bill of Edward Underhill, being for rent of room necessary for housing one of the portable hoisting plants at Yonkers, N. Y., amounting to $200, is hereby approved and ordered certified to the Comptroller for payment.

On motion of Commissioner Tucker, the same was adopted.

The Committee also presented the following communication, received from the Chief Engineer :

NEW YORK, December 1, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—Having found it necessary to add to the equipment of Sodom Dam an iron grating to be placed in front of the gate-house openings, and it being necessary, therefore, to fasten to the masonry of the gate-house, while the water is low, iron grooves which were not provided for in the contract, and inasmuch as, owing to the uncertain character of the work, it cannot be properly let under contract, I would inform you that I have directed Messrs. Coldwell, Wilcox & Co., of Newburgh, to send mechanics for the purpose of doing the necessary work which is now going on. Although I cannot state the amount to be expended in this manner, I am confident that it will not exceed $350.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution :

Resolved, That the action of the Chief Engineer in directing Messrs. Coldwell, Wilcox & Co. to do the work above referred to be and hereby is approved, and an appropriation of three hundred and fifty dollars is hereby made to cover the cost thereof.

The same was adopted by the following vote :

Affirmative—The Commissioner of Public Works and Commissioners Duane, Tucker and Cannon—4.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, the accompanying bill of Coldwell, Wilcox & Co., being for one brass screw for use at the Croton gate-house, amounting to $9.20, be and hereby is approved and ordered certified to the Comptroller for payment.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, the accompanying bill of Coldwell, Wilcox & Co., being for lead gasket for pivot gate at Bog Brook dams, amounting to $58, is hereby approved and ordered certified to the Comptroller for payment.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That, upon the recommendation of the Chief Engineer, the accompanying bill of Coldwell, Wilcox and Co., being for new quadrant for pivot gate at Bog Brook dams, amounting to $50, is hereby approved and ordered certified to the Comptroller for payment.

On motion of Commissioner Tucker, the same was adopted.

The Committee also presented the following communication, received from the Chief Engineer :

NEW YORK, December 1, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—You are aware that we were waiting, before finishing the approach of Shaft 24, to see what the Harlem River Bridge Commission would do in order to conform to their plans.

We now are able to proceed with the work. Consequently considerable grading is necessary and some surplus material has to be removed.

Mr. John J. Lennon, who is doing work for the Bridge Commissioners, being in want of material for grading, requests, in writing, permission to remove the surplus material which we may have to spare. If his request is granted, he agrees to remove all the material that we do not want, and also to slope the bank according to the directions of the engineers.

I recommend that his request be granted. I send herewith a copy of Mr. Lennon's letter.

I am, very respectfully,

A. FTELEY, Chief Engineer.

—and recommended the adoption of the following resolution :

Resolved, That authority is hereby given to John J. Lennon to remove from the grounds around Shaft No. 24 of the New Aqueduct such surplus material as may be directed by the Chief Engineer of the Aqueduct Commissioners, providing he will comply with the directions of the Chief Engineer in sloping the banks at said place, and agree that the work shall be done without expense to the Aqueduct Commissioners.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled William L. Brangan vs. the Mayor, Aldermen and Commonalty of the City of New York, for the sum of four hundred and twenty-six dollars and fourteen cents ; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of William L. Brangan for the sum of four hundred and twenty-six dollars and fourteen cents, being amount of judgment rendered in favor of said Brangan for salary due him while employed as an Axeman on the New Aqueduct, and certified to the Comptroller for payment.

The same was adopted by the following vote :

Affirmative—The Commissioner of Public Works and Commissioners Duane, Tucker and Cannon—4.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled Thomas J. Fallon vs. the Mayor, Aldermen and Commonalty of the City of New York, for the sum of one hundred and nine dollars and eighty-two cents ; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of Thomas J. Fallon for the sum of one hundred and nine dollars and eighty-two cents, being amount of judgment rendered in favor of said Fallon for salary due him while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

The same was adopted by the following vote :

Affirmative—The Commissioner of Public Works and Commissioners Duane, Tucker and Cannon—4.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled William A. McAllister vs. The Mayor, Aldermen and Commonalty of the City of New York, for the sum of forty-nine dollars and thirty cents ; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of William A. McAllister for the sum of forty-nine dollars and thirty cents, being amount of judgment rendered in favor of said McAllister for salary due him while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

The same was adopted by the following vote :

Affirmative—The Commissioner of Public Works and Commissioners Duane, Tucker and Cannon—4.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled Edward H. Best vs. The Mayor, Aldermen and Commonalty of the City of New York, for the sum of two hundred and twenty-three dollars and fifty-six cents ; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of Edward H. Best for the sum of two hundred and twenty-three dollars and fifty-six cents, being amount of judgment rendered in favor of said Best for salary due him while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

The same was adopted by the following vote :

Affirmative—The Commissioner of Public Works, and Commissioners Duane, Tucker, and Cannon—4.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled William F. Guerin vs. The Mayor, Aldermen and Commonalty of the City of New York, for the sum of one hundred and nine dollars and fifty-eight cents ; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of William F. Guerin for the sum of one hundred and nine dollars and fifty-eight cents, being amount of judgment rendered in favor of said Guerin for salary due him while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

The same was adopted by the following vote :

Affirmative—The Commissioner of Public Works and Commissioners Duane, Tucker and Cannon—4.

The Committee also recommended the adoption of the following premable and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled Charles J. Reilly vs. The Mayor, Aldermen and Commonalty of the City of New York, for the sum of one hundred and eighty-eight dollars ; therefore,

Resolved, That a voucher be and hereby is ordered drawn in favor of Charles J. Reilly for the sum of one hundred and eighty-eight dollars, being amount of judgment rendered in favor of said Reilly for salary due him while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

The same was adopted by the following vote :

Affirmative—The Commissioner of Public Works and Commissioners Duane, Tucker and Cannon—4.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled Patrick J. Loughlin vs. The Mayor, Aldermen and Commonalty of the City of New York, for the sum of one hundred and seventy-five dollars and thirty-six cents ; therefore,

Resolved, That a voucher be and hereby is ordered drawn in favor of Patrick J. Loughlin for for the sum of one hundred and seventy-five dollars and thirty-six cents, being amount of judgment rendered in favor of said Loughlin for salary due him while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

The same was adopted by the following vote :

Affirmative—The Commissioner of Public Works and Commissioners Duane, Tucker and Cannon—4.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled Joseph F. Sweeny vs. The Mayor, Aldermen and Commonalty of the City of New York, for the sum of one hundred and sixty-two dollars ; therefore,

Resolved, That a voucher be and he eby is ordered drawn in favor of Joseph F. Sweeny for the sum of one hundred and sixty-two dollars, being amount of judgment rendered in favor of said Sweeny for salary due him while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

The same was adopted by the following vote :

Affirmative—The Commissioner of Public Works and Commissioners Duane, Tucker and Cannon—4.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled Orlando C. Flynn vs. The Mayor, Aldermen and Commonalty of the City of New York for the sum of one hundred and fifty-four dollars and twenty cents ; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of Orlando C. Flynn for the sum of one hundred and fifty-four dollars and twenty cents, being amount of judgment rendered in favor of said Flynn for salary due him while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

The same was adopted by the following vote :

Affirmative—The Commissioner of Public Works and Commissioners Duane, Tucker and Cannon—4.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled Michael Brady vs. The Mayor, Aldermen and Commonalty of the City of New York, for the sum of one hundred and twenty-three dollars and twenty-eight cents ; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of Michael Brady for the sum of one hundred twenty-three dollars and twenty-eight cents, being amount of judgment rendered in favor of said Brady for salary due him while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

The same was adopted by the following vote :

Affirmative—The Commissioner of Public Works and Commissioners Duane, Tucker and Cannon—4.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled John Montague vs. The Mayor, Aldermen and Commonalty of the City of New York, for the sum of eight hundred and forty-nine dollars and thirty-two cents ; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of John Montague for the sum of eight hundred and forty-nine dollars and thirty-two cents, being amount of judgment rendered in favor of said Montague for salary due him while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

The same was adopted by the following vote :

Affirmative—The Commissioner of Public Works and Commissioners Duane, Tucker and Cannon—4.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled Sarsfield Kennedy vs. The Mayor, Aldermen and Commonalty of the City of New York, for the sum of one hundred and twenty-six dollars and twenty-six cents ; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of Sarsfield Kennedy for the sum of one hundred and twenty-six dollars and twenty-six cents, being amount of judgment rendered in favor of said Kennedy for salary due him while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

The same was adopted by the following vote :

Affirmative—The Commissioner of Public Works and Commissioners Duane, Tucker and Cannon—4.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled John Mullen vs. The Mayor, Aldermen and Commonalty of the City of New York, for the sum of five hundred and eighty-six dollars and fifty cents ; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of John Mullen for the sum of five hundred and eighty-six dollars and fifty cents, being amount of judgment rendered in favor of said Mullen for salary due him while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

The same was adopted by the following vote :

Affirmative—The Commissioner of Public Works and Commissioners Duane, Tucker and Cannon—4.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled John Gorman vs. The Mayor, Aldermen and Commonalty of the City of New York, for the sum of one hundred and twenty-one dollars and eighty-seven cents ; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of John Gorman for the sum of one hundred and twenty-one dollars and eighty-seven cents, being amount of judgment rendered in favor of said Gorman for salary due him while employed as a Rodman in the Engineer Corps on the New Aqueduct, and certified to the Comptroller for payment.

The same was adopted by the following vote :

Affirmative—The Commissioner of Public Works and Commissioner Duane, Tucker and Cannon—4.

The Committee also recommended the adoption of the following preamble and resolution:

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled Edward H. Judson vs. The Mayor, Aldermen and Commonalty of the City of New York, for the sum of one hundred dollars and sixty-four cents; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of Edward H. Judson for the sum of one hundred dollars and sixty-four cents, being amount of judgment rendered in favor of said Judson for salary due him while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

The same was adopted by the following vote:

Affirmative—The Commissioner of Public Works and Commissioners Duane, Tucker and Cannon—4.

The Committee also recommended the adoption of the following preamble and resolution:

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled James H. Ackerman vs. The Mayor, Aldermen and Commonalty of the City of New York, for the sum of one hundred and thirty-four dollars and twenty cents; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of James H. Ackerman for the sum of one hundred and thirty-four dollars and twenty cents, being amount of judgment rendered in favor of said Ackerman for salary due him while employed as an Axeman in the Engineer Corps on the New Aqueduct, and certified to the Comptroller for payment.

The same was adopted by the following vote:

Affirmative—The Commissioner of Public Works and Commissioners Duane, Tucker and Cannon—4.

The Committee of Finance and Audit reported their examination and audit of Vouchers Nos. 7464 to 7479, inclusive, being judgments rendered in favor of late Inspectors of Masonry and Axemen for salary due them, amounting to $3,640.03; also of bills contained in Vouchers Nos. 7480 to 7484, inclusive, amounting to $329.40; also of Voucher No. 7485, being final estimate for building eleven head-house superstructures, etc., on the New Aqueduct, amounting to $4,617.74.

On motion of Commissioner Cannon, the same were approved and ordered certified to the Comptroller for payment.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, December 9, 1891, at 3 o'clock P. M.

Present—The Comptroller, the Commissioner of Public Works, and Commissioners Duane and Scott.

The Construction or Executive Committee presented the following :

The Construction or Executive Committee report :

That at a meeting of said Committee, held on December 8, 1891, the following resolution was adopted, and they now ask your approval of their said action :

" Resolved, That the bid box be closed and the keys given to the President, and that the Secretary be authorized by this Commission to receive the bids for building two brick engine-houses for the portable hoisting plants of the New Croton Aqueduct, as called for in the approved forms of contract and specifications on file in the office of the Aqueduct Commissioners ; also to receive the checks of the bidders and to make the necessary preparations for opening the bids received for doing said work under the law."

On motion of Commissioner Scott, the action of the Committee was approved.

In compliance to the following notice, published daily for fifteen consecutive days, beginning with November 21, 1891, in the CITY RECORD, New York "World" and "Commercial Advertiser," bids were received for building two brick engine-houses for the portable hoisting plants of the New Croton Aqueduct :

AQUEDUCT COMMISSIONERS' OFFICE,
ROOM 209, STEWART BUILDING, No. 280 BROADWAY,
NEW YORK, November 21, 1891.

To Contractors.

Bids or proposals for building two brick engine-houses for the portable hoisting plants, one of which to be located at the Dunwoodie Gate-house, Yonkers, N. Y., and the other at the Pocantico Gate-house, North Tarrytown, N. Y., of the New Croton Aqueduct, as called for in the approved forms of contract and specifications on file in the office of the Aqueduct Commissioners, will be received at this office until 3 o'clock P. M. on Wednesday, December 9, 1891, at which place and

hour they will be publicly opened by the Aqueduct Commissioners, and the award for doing said work will be made by said Commissioners as soon thereafter as possible.

Blank forms of contract and specifications for doing said work, and bids or proposals, and proper envelopes for their inclosure, can be obtained at the above office of the Aqueduct Commissioners on application to the Secretary.

By order of the Aqueduct Commissioners.

JAMES C. DUANE, President.

JOHN C. SHEEHAN, Secretary.

No. 1. James J. Spearing	$15,938 00
No. 2. John Twiname	9,546 00
No. 3. Peter J. Moran	10,680 00
No. 4. Luke A. Burke & Co	23,600 00

Whereupon, on motion of Commissioner Scott, the following preamble and resolution was adopted :

Whereas, Bids for building two brick engine-houses for the portable hoisting plants of the New Croton Aqueduct having been received and publicly opened and read ; therefore

Resolved, That the Chief Engineer is hereby directed to have said bids calculated and tabulated, and submit the same, together with his estimate of the work, at a meeting of the Construction or Executive Committee of the Aqueduct Commissioners, for consideration and canvassing by them, at 3 o'clock P. M. on the 11th day of December, 1891 ; and the bids and checks of the bidders are hereby referred to the Committee of Finance and Audit for examination and report to the Commissioners as to their formality and the sufficiency of the sureties proposed by the bidders.

On motion of Commissioner Scott, it was decided that when the Commissioners adjourn they adjourn to meet on Friday next, the 11th instant, at 3.30 o'clock P. M.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Adjourned Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Friday, December 11, 1891, at 3.30 o'clock P. M.

Present—The Commissioner of Public Works, and Commissioners Duane, Scott and Cannon.

The Committee of Finance and Audit reported their examination and audit of bills contained in Vouchers Nos. 7487 to 7498, inclusive, amounting to $1,566.54; also of Vouchers Nos. 7499 to 7503, inclusive, being judgments rendered in favor of late Inspectors of Masonry for salary due them, amounting to $1,333.86; also of Vouchers Nos. 7504 to 7512, inclusive, being estimates for work done by contractors, amounting to $57,478.80.

On motion of Commissioner Scott, the same were approved and ordered certified to the Comptroller for payment.

The Committee also presented the following:

The Committee of Finance and Audit report:

That they have examined the bids and checks received December 9, 1891, for building two brick engine-houses for the portable hoisting plants of the New Croton Aqueduct.

The checks, amounting to $4,000, were correct and transmitted to the Comptroller, and his receipt is on file.

The bids were found correct as to their formality, and the sureties proposed appear to be sufficient.

On motion of Commissioner Cannon, the same was ordered filed.

The Construction or Executive Committee presented the following communication, received from the Chief Engineer:

NEW YORK, December 8, 1891.

To the Honorable the Committee on Construction:

GENTLEMEN—I have, with your approval, asked for bids for repairs which are urgently needed for protection from the weather of the Hoyt building, now occupied by the Division Engineer at Brewsters, and which, most probably, will remain for the use of the future Superintendent of Maintenance.

The two bids received being evidently too high, I would ask you to authorize me to buy shingles and other lumber, and to engage a carpenter and helper to do the work by day's labor. I expect in this way to spend not more than $175 instead of $225, which is the amount of the lowest bid.

I am, very respectfully,

A. FTELEY, Chief Engineer.

And recommended the adoption of the following resolution :

Resolved, That authority is hereby given to the Chief Engineer to purchase shingles and other lumber and to engage a carpenter and helper to do the repairs required on the Hoyt building, now occupied by the Division Engineer at Brewsters ; and an appropriation of one hundred and seventy-five dollars is hereby made to cover the cost thereof.

The same was adopted by the following vote :

Affirmative—The Commissioner of Public Works and Commissioners Duane, Scott, and Cannon—4.

The Committee also recommended the adoption of the following resolution :

Resolved, That the accompanying bill for taxes due School District No. 6, Town of Southeast, N. Y., amounting to one hundred and eleven dollars and fifty-one cents, is hereby approved and ordered certified to the Comptroller for payment.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That the accompanying bill for taxes due School District No. 9, Town of Yorktown, N. Y., amounting to one dollar and thirty-six cents, is hereby approved and ordered certified to the Comptroller for payment.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled Thomas M. Hart vs. The Mayor, Aldermen and Commonalty of the City of New York for the sum of eight hundred dollars ; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of Thomas M. Hart for the sum of eight hundred dollars, being amount of judgment rendered in favor of said Hart for salary due him while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled Herbert M. Johnston vs. The Mayor, Aldermen and Commonalty of the City of New York, for the sum of sixty-eight dollars and forty cents ; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of Herbert M. Johnston for the sum of sixty-eight dollars and forty cents, being amount of judgment rendered in favor of said Johnston for salary due him while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

On motion of Commissioner Cannon, the same was adopted.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled John Byrne vs. The Mayor, Aldermen and Commonalty of the City of New York for the sum of one hundred and eighty-seven dollars and twenty cents ; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of John Byrne for the sum of one hundred and eighty-seven dollars and twenty cents, being amount of judgment rendered in favor of said Byrne for salary due him while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled James Hayes vs. The Mayor, Aldermen and Commonalty of the City of New York for the sum of one hundred and fifty-five dollars and ninety-eight cents ; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of James Hayes for the sum of one hundred and fifty-five dollars and ninety-eight cents, being amount of judgment rendered in favor of said Hayes for salary due him while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

On motion of Commissioner Cannon, the same was adopted.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled Edward S. Coe vs. The Mayor, Aldermen and Commonalty of the City of New York for the sum of one hundred and twenty-two dollars and twenty-eight cents ; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of Edward S. Coe for the sum of one hundred and twenty-two dollars and twenty-eight cents, being amount of judgment rendered in favor of said Coe for salary due him while employed as an Inspectaor of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

On motion of Commissioner Cannon, the same was adopted.

The Committee also recommended the adoption of the following resolution:

Resolved, That upon the recommendation of the Chief Engineer, the contract for building two brick engine-houses for the portable hoisting plants of the New Croton Aqueduct is hereby awarded to John Twiname at his bid of nine thousand five hundred and forty-six dollars, it being the lowest bid received for doing said work and less than the estimate of the Chief Engineer.

On motion of Commissioner Scott, the same was adopted.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, December 23, 1891, at 3 o'clock P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

The Committee of Finance and Audit reported their examination and audit of bills contained in Vouchers Nos. 7513 to 7530, inclusive, and 7533 to 7544, inclusive, amounting to $1,612.67; also of Vouchers Nos. 7545 and 7546, being judgments rendered in favor of Inspectors of Masonry for salary due them, amounting to $188.84.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Construction or Executive Committee recommended the adoption of the following preambles and resolutions:

Whereas, On November 13, 1891, Final Plan Sheet No. 5, of 1891, and the six similar property maps showing the lands required for the construction of a high masonry dam near the mouth of the Croton river, in Westchester County, New York, to be known as the "Cornell's Dam," were approved and adopted by the Aqueduct Commissioners; and

Whereas, On December 22, 1891, the Commissioner of Public Works presented construction plans, entitled "Sheets A, B, C, D and E," for the building of said dam; therefore

Resolved, That, for the more efficient carrying out of the provisions of chapter 490 of the Laws of 1883 of the State of New York, we, the Aqueduct Commissioners appointed to carry out the provisions of said chapter of said law and the acts amendatory thereof, do hereby approve and adopt the said plans submitted to us by the Commissioner of Public Works for the construction of said dam, subject to such changes or modifications as the Aqueduct Commissioners may from time to time deem necessary for the more efficient carrying out of the provisions of said act.

Resolved, That the plans so adopted be filed in the office of the Aqueduct Commissioners, and a copy of the same and each of them, with a certificate of such adoption written thereon and signed

by the Aqueduct Commissioners, be transmitted to the Commissioner of Public Works for filing in his office.

The same were adopted by the following vote :

Affirmative—Commissioners Duane, Tucker, Scott and Cannon--4.

The Committee also submitted the following copy of a report received from the Chief-Engineer, the original of which was transmitted to his Honor the Mayor, giving a summarized statement of the amount of work done and remaining to be done upon the New Aqueduct during the year 1891, and recommended that the same be spread in full on the minutes and filed :

CHIEF ENGINEER'S OFFICE—AQUEDUCT COMMISSIONERS,
ROOM 213, STEWART BUILDING,
NEW YORK, December 22, 1891.

To the Honorable the Committee on Construction :

GENTLEMEN—The President of the Aqueduct Commissioners referred to me a communication from his Honor the Mayor to the Aqueduct Commissioners requesting a report "briefly summarized of the year's work of your Department, with a review of the situation of the work as it stands to-day," for information and report.

The following is respectfully submitted in answer to the President's request :

Of the two principal divisions of the work under your charge, i. e., the New Aqueduct and the Storage System :

New Aqueduct—The Aqueduct was so far completed previous to January 1, 1891, as to enable you to put it in service on July 15, 1890.

You maintained the same while the balance of the work was being prosecuted until July 1, 1891, when the control of the Aqueduct was transferred, as far as necessary for the service of the water supply, to the Department of Public Works.

During the year 1891, final estimates were given for Sections 9, 10 and 16 of the New Aqueduct proper ; the work done covered the construction of an extensive gate-house at Croton Dam, a highway and retaining-wall at the same place, eleven head-houses at the shafts, a blow-off at Shaft 24, the grading and fencing of the gate-house grounds at One Hundred and Thirty-fifth street, the completion of Section 15½, the grading and fencing of the grounds at all the shaft sites, the letting of a contract for building two engine-houses.

A portion of the above-mentioned work is unfinished and will be completed early next summer.

Elaborate records have also been prepared at the request of Counsel for the City for use in the actions brought by the aqueduct contractors.

Storage System—This Commission is now engaged in building the storage system of the new water supply, the importance of which is as great as that of the New Aqueduct proper, as it is calculated to keep in reserve the amount of water necessary to supply the large capacity of the New Aqueduct.

It is composed of the following structures :

One dam on the East Branch of the Croton river, and
Two dams on Bog brook, near Brewsters, in Putnam County,
Two dams on the West Branch of Croton river, near Carmel, in Putnam County,
One dam on Titicus river, near Purdy's Station, in Westchester County,
One high dam on the lower part of Croton river, and

One dam on Muscoot river further up in the valley; the last two named in Westchester County.

Of the above, on January 1, 1891, the East Branch Reservoir at Brewsters was so far completed as to allow you in the following early spring to fill the reservoir behind it to within four feet of high-water mark, thus adding to the existing storage nearly four thousand million gallons, which proved of inestimable value during the recent drought.

New highways have also been built to take the place of those which will be flooded by the new reservoir.

The dams on Bog brook have been under way, and although not entirely completed are in such condition of progress that the reservoir behind them can be filled next spring, when a new addition of over four thousand millions of gallons will be made to the present available storage.

The three dams near Carmel and near Purdy's Station which were begun last year are now under way.

The work to be put under contract in connection with the above includes the preparation of the basins and a new system of highways for the reservoirs at Carmel and at Purdy's Station, which will be begun as soon as the necessary land rights are acquired.

The underground explorations by diamond drills at various points in the Croton River Valley were continued during the entire year, and have enabled your Commission to decide on the location and construction of a high dam at the Cornell's site. This dam, with its reservoir of a capacity of over thirty thousand million gallons is to be the crowning feature of the work, and is to complete the plan of the new water supply. Its necessity for the purpose of collecting the drainage of the lower half of the Croton water-shed, which, as illustrated by past experiences, would otherwise be in a large measure wasted, is now recognized; the plans for its construction are ready, and it is expected that the work will be advertised next January, as soon as the title to the necessary lands has been perfected. In connection with this dam, a new system of roads and bridges is to be constructed to take the place of those which are to be flooded by the proposed reservoir.

The estimated cost of the work to be done by your Commission in connection with the Aqueduct, with the dams and reservoirs now under construction, and with the high dam, is $7,500,000, exclusive of the cost of land, a large portion of which remains to be acquired.

I am, very respectfully,

(Signed) A. FTELEY, Chief Engineer.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also submitted communication of the Comptroller, addressed to the Counsel to the Corporation, concerning claim of Peter J. Garvey, amounting to $81.68, for salary claimed to be due him while employed as an Inspector of Masonry on the New Aqueduct, and opinion of the Counsel to the Corporation, addressed to the Comptroller, advising that the claim is a proper one for compromise; and the Comptroller having adjusted and settled said claim for the sum of $40.84, recommended the adoption of the following resolution:

Resolved, That a voucher be and hereby is ordered drawn in favor of Peter J. Garvey for the sum of forty dollars and eighty-four cents, being the amount adjusted and agreed upon by the Comptroller and said Garvey for salary due him while employed as an Inspector of Masonry in the Engineer Corps of the Aqueduct Commissioners, and certified to the Comptroller for payment.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following resolution :

Resolved, That the accompanying bill for taxes due School District No. 9, Town of Greenburgh, N. Y., amounting to two dollars and thirty-five cents, is hereby approved and ordered certified to the Comptroller for payment.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, An application has been made by John F. Gaynor, assignee of John M. Waddle, contractor, for an extension of time to June 1, 1892, in which to complete the work of the construction of the blow-off at Shaft No. 24 of the New Aqueduct ; and the Chief Engineer having recommended that said extension of time be granted, provided the pipes are laid and the tunnel excavation refilled and completed on or before March 1, 1892 ; therefore

Resolved, That the Aqueduct Commissioners hereby grant to John F. Gaynor, assignee of John M. Waddle, contractor, an extension of time to June 1, 1892, in which to complete the work above referred to, providing the pipes are laid and the tunnel excavation refilled and completed on or before March 1, 1892 ; and also providing that the bondsmen of said Gaynor shall enter into a stipulation continuing their obligations for and during the completion of said contract under said extension of time, which is hereby allowed to him as further time for the performance of said contract.

On motion of Commissioner Tucker, the same was adopted.

The Committee also submitted bond of John F. Gaynor, assignee of John M. Waddle, contractor for the construction of the blow-off at Shaft No. 24, on Section No. 11A of the New Aqueduct, and recommended that the same be approved.

On motion of Commissioner Scott, the recommendation was approved.

The Committee also recommended the adoption of the following preamble and resolution :

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled John C. Dooley vs. The Mayor, Aldermen and Commonalty of the City of New York for the sum of one hundred and forty-eight dollars; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of John C. Dooley for the sum of one hundred and forty-eight dollars, being amount of judgment rendered in favor of said Dooley for salary due him while employed as an Inspector of Masonry on the New Aqueduct, and certified to the Comptroller for payment.

On motion of Commissioner Scott, the same was adopted.

On motion of Commissioner Scott, the minutes of meetings of November 18, 25, December 2 and 9, 1891, were ordered approved.

The Commissioners then adjourned.

JOHN C. SHEEHAN, Secretary.

AQUEDUCT COMMISSION.

Minutes of Stated Meeting of the Aqueduct Commissioners, held at their Office, No. 209 Stewart Building, on Wednesday, December 30, 1891, at 3 o'clock, P. M.

Present—Commissioners Duane, Tucker, Scott and Cannon.

In the absence of the Secretary Auditor J. C. Lulley acted as Secretary pro tem.

The Construction or Executive Committee recommended the adoption of the following resolution:

Resolved, That the accompanying bill of C. B. Travis, being for use of land at Carmel, New York, amounting to seventy-five dollars, is hereby approved and ordered certified to the Comptroller for payment.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following resolution:

Resolved, That the accompanying bill of Eleazer H. Ganung, being for use of land at Carmel, New York, amounting to one hundred dollars, is hereby approved and ordered certified to the Comptroller for payment.

On motion of Commissioner Scott, the same was adopted.

The Committee also recommended the adoption of the following resolution:

Resolved, That the accompanying bill for taxes due the Village of North Tarrytown for the year 1891, amounting to forty-six dollars and twenty cents, is hereby approved and ordered certified to the Comptroller for payment.

On motion of Commissioner Cannon, the same was adopted.

The Committee also recommended the adoption of the following resolution:

Resolved, That authority is hereby given to the Chief Engineer to have printed one hundred and fifty copies of the contract plans of the New Croton Dam, at Cornell's site, and an appropriation of three hundred and fifty dollars is hereby made to cover the cost thereof.

The same was adopted by the following vote:

Affirmative – Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee also recommended the adoption of the following preamble and resolution:

Whereas, An application has been made by P. J. Moran, contractor, for an extension of time to July 1, 1892, in which to complete the work of grading, improving and fencing the grounds around the One Hundred and Thirty-fifth street gate-house; and the Chief Engineer having recommended that said extension of time be granted; therefore,

Resolved, That the Aqueduct Commissioners hereby grant to P. J. Moran, contractor, an extension of time to July 1, 1892, in which to complete the work above referred to, provided the bondsmen of said Moran shall enter into a stipulation continuing their obligations for and during the completion of said contract under said extension of time, which is hereby allowed to him as further time for the performance of said contract.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following preamble and resolution:

Whereas, an application has been made by Augustine M. Newton, contractor, for an extension of time until June 1, 1892, in which to complete the work of the construction of a highway and retaining walls at Croton Dam, New York; and the Chief Engineer having stated that the City will suffer no damage on account of said extension of time; therefore,

Resolved, That the Aqueduct Commissioners hereby grant to Augustine M. Newton, contractor, an extension of time to June 1, 1892, in which to complete the work above referred to, provided the bondsmen of said Newton shall enter into a stipulation continuing their obligations for and during the completion of said contract under said extension of time, which is hereby allowed to him as further time for the performance of said contract.

On motion of Commissioner Tucker, the same was adopted.

The Committee also recommended the adoption of the following preamble and resolution:

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in an action entitled Catharine Pilkington, as administratrix, etc., of the estate of Charles Pilkington, deceased, vs. The Mayor, Aldermen and Commonalty of the City of New York, for the sum of three hundred and thirty-nine dollars and eighty-nine cents; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of Catharine Pilkington for the sum of three hundred and fifty-two dollars and eighty-one cents, being amount of judgment rendered in favor of said Catharine Pilkington as administratrix, etc., of the estate of Charles Pilkington, deceased, for salary due said Charles Pilkington while employed as an Inspector of Masonry on the New Aqueduct, and interest thereon from May 13 to December 31, 1891, and certified to the Comptroller for payment.

The same was adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott, and Cannon—4.

The Committee also recommended the adoption of the following preamble and resolution:

Whereas, The Counsel to the Corporation has transmitted to the Aqueduct Commissioners, with his approval, a transcript of judgment in favor of Henry S. White, substituted as plaintiff in the action entitled Joseph W. Hale vs. The Mayor, Aldermen and Commonalty of the City of New York for salary of said Joseph W. Hale, as Inspector of Masonry on the New Aqueduct, for the sum of one thousand two hundred and fifty dollars; therefore

Resolved, That a voucher be and hereby is ordered drawn in favor of Henry S. White for the sum of one thousand two hundred and fifty dollars, being amount of judgment rendered in favor of said Henry S. White as substituted plaintiff in the action as set forth above, and certified to the Comptroller for payment.

The same was adopted by the following vote:

Affirmative—Commissioners Duane, Tucker, Scott and Cannon—4.

The Committee of Finance and Audit reported their examination and audit of bills contained in Vouchers Nos. 7552 to 7564, inclusive, amounting to $442.04; also of Vouchers Nos. 7565 and 7566, being judgments rendered in favor of late Inspectors of Masonry for salary due them, amounting to $1,602.81.

On motion of Commissioner Tucker, the same were approved and ordered certified to the Comptroller for payment.

The Commissioners then adjourned.

J. C. LULLEY, Secretary pro tem.

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